

# Christopher M. Dobson, F.R.S.

## Research Publications

### 1969

1. A.M. Pritchard and C.M. Dobson, "Mossbauer effect and iron corrosion kinetics" **Nature**, 224, 1295 (1969).

### 1972

2. B. Bleaney, C.M. Dobson, B.A. Levine, R.B. Martin, R.J.P. Williams, and A.V. Xavier, "Origin of lanthanide nuclear magnetic resonance shifts and their uses" **J Chem Soc Chem Comm**, 791-793 (1972).

### 1973

3. C.D. Barry, C.M. Dobson, D.A. Sweigart, L.O. Ford, and R.J.P. Williams, "The structure of a cholesterol: shift reagent complex in solution" in **NMR Shift Reagents** (ed. R.E. Sievers). Academic Press. New York, p. 173 (1973).
4. I.D. Campbell, C.M. Dobson, R.J.P. Williams, and A.V. Xavier, "Determination of structure of proteins in solution – Lysozyme" **Ann NY Acad Sci**, 222, 163-174 (1973).
5. I.D. Campbell, C.M. Dobson, R.J.P. Williams, and A.V. Xavier, "Resolution enhancement of protein PMR spectra using the difference between a broadened and a normal spectrum" **J Magn Reson**, 11, 172-181 (1973).
6. C.M. Dobson, R.J.P. Williams, and A.V. Xavier, "Separation of contact and pseudo-contact contributions to shifts induced by lanthanide (III) ions in nuclear magnetic resonance spectra" **J Chem Soc Dalton**, 2662-2664 (1973).
7. A.M. Pritchard and C.M. Dobson, "Mossbauer spectra of passivated iron surfaces" **Chem Phys Lett**, 23, 514-515 (1973).

### 1974

8. C.D. Barry, C.M. Dobson, R.J.P. Williams, and A.V. Xavier, "Lanthanoid(III) cations as nuclear magnetic resonance conformational probes – Studies on cytidine 5'-monophosphate at pH 2" **J Chem Soc Dalton**, 1765-1769 (1974).
9. I.D. Campbell, C.M. Dobson, G. Jeminet, and R.J.P. Williams, "Pulsed NMR methods for the observation and assignment of exchangeable hydrogens: application to bacitracin" **FEBS Lett**, 49, 115-119 (1974).
10. I.D. Campbell, C.M. Dobson, and R.J.P. Williams, "Intramolecular nuclear Overhauser effects in proton magnetic-resonance spectra of proteins" **J Chem Soc Chem Comm**, 888-889 (1974).
11. I.D. Campbell, C.M. Dobson, R.J.P. Williams, and A.V. Xavier, "New techniques for the quantitative determination of the structure of proteins in solution applied to hen egg-white lysozyme" in **Lysozyme** (ed. E.F. Osserman, R.E. Canfield, and S. Beychek). Academic Press. New York, p. 219 (1974).

12. C.M. Dobson, N.J. Hoyle, C.F. Geraldès, M. Bruschi, J. LeGall, P.E. Wright, and R.J.P Williams, "Outline structure of cytochrome 3 and consideration of its properties" **Nature**, 249, 425-429 (1974).
13. C.M. Dobson, R.J.P. Williams, and A.V. Xavier, "Ethylenediaminetetra-acetato-lanthanate(III), -praesodimate(III), -europate(III), and -gadolate (III) complexes as nuclear magnetic-resonance probes of molecular-conformations of adenosine 5'-monophosphate and cytidine 5'-monophosphate in solution" **J Chem Soc Dalton**, 1762-1764 (1974).

#### 1975

14. I.D. Campbell and C.M. Dobson, "Spin-echo double-resonance – Novel method for detecting decoupling in Fourier-transform nuclear magnetic-resonance" **J Chem Soc Chem Comm**, 750-751 (1975).
15. I.D. Campbell, C.M. Dobson, and R.J.P. Williams, "Studies of exchangeable hydrogens in lysozyme by means of Fourier transform proton magnetic resonance" **Proc R Soc Lond B Biol Sci**, 189, 485-502 (1975).
16. I.D. Campbell, C.M. Dobson, and R.J.P Williams, "Proton magnetic resonance studies of the tyrosine residues of hen lysozyme-assignment and detection of conformational mobility" **Proc R Soc Lond B Biol Sci**, 189, 503-509 (1975).
17. I.D. Campbell, C.M. Dobson, R.J.P Williams, and P.E. Wright, "Pulse methods for the simplification of protein NMR spectra" **FEBS Lett**, 57, 96-99 (1975).
18. I.D. Campbell, C.M. Dobson, and R.J.P. Williams, "Assignment of H-1 NMR-spectra of proteins" **Proc R Soc Lond A Mat**, 345, 23-40 (1975).
19. I.D. Campbell, C.M. Dobson, and R.J.P. Williams, "Nuclear magnetic-resonance studies on structure of lysozyme in solution" **Proc R Soc Lond A Mat**, 345, 41-59 (1975).
20. C.M. Dobson, "Comments on the proposed rigidity of staphylococcal protease" **Biochemistry**, 14, 4905-4906 (1975).
21. C.M. Dobson, L.O. Ford, S.E. Summers, and R.J.P. Williams, "Nuclear magnetic-resonance study of conformations of penicillins in solution using lanthanide ion probes" **J Chem Soc Farad T 2**, 71, 1145-1153 (1975).
22. C.M. Dobson, G.R. Moore, and R.J.P Williams, "Assignment of aromatic amino acid PMR resonances of horse ferricytochrome c" **FEBS Lett**, 51, 60-65 (1975).
23. C.M. Dobson and R.J.P Williams, "An NMR study of the dynamics of inhibitor-induced conformational changes in lysozyme" **FEBS Lett**, 56, 362-365 (1975).

#### 1976

24. I.D. Campbell, C.M. Dobson, G.R. Moore, S.J. Perkins, and R.J.P Williams, "Temperature dependent molecular motion of a tyrosine residue of ferrocycytochrome c" **FEBS Lett**, 70, 96-100 (1976).

25. A. Cave, C.M. Dobson, J. Parello, and R.J.P Williams, "Conformation mobility within the structure of muscular parvalbumins. An NMR study of the aromatic resonances of phenylalanine residues" **FEBS Lett**, 65, 190-194 (1976).
26. C.M. Dobson and B.A. Levine, "Lanthanide ions as NMR probes of conformations of molecules in solution", in **New Techniques in Biophysics and Cell Biology III** (ed. R.H. Pain and B.J. Smith). John Wiley & Sons. London, p. 19 (1976).

#### 1977

27. C.C.F. Blake, D.E. Grace, L.N. Johnson, S.J. Perkins, D.C. Phillips, R. Cassels, C.M. Dobson, F.M. Poulsen, and R.J.P Williams, "Physical and chemical properties of lysozyme" **Ciba Found Symp**, 137-185 (1977).
28. I.D. Campbell, C.M. Dobson, and R.G. Ratcliffe, "Fourier transform proton NMR in H<sub>2</sub>O – Method for measuring exchange and relaxation rates" **J Magn Reson**, 27, 455-463 (1977).
29. C.M. Dobson, "The structure of lysozyme in solution" in **NMR in Biology** (ed. R.A. Dwek, I.D. Campbell, R.E. Richards, and R.J.P. Williams). Academic Press. London, p. 63 (1977).
30. C.M. Dobson and R.J.P. Williams, "Nuclear magnetic resonance studies of the interaction of lanthanide cations with lysozyme" in **Metal-Ligand Interactions in Organic Chemistry and Biochemistry I** (ed. B. Pullman and B. Goldblum). Riedel. Holland, p. 255 (1977)

#### 1978

31. C.C.F. Blake, D.E.P. Grace, L.N. Johnson, S.J. Perkins, D.C. Phillips, R. Cassels, C.M. Dobson, F.M. Poulsen, and R.J.P. Williams, "Physical and chemical properties of lysozyme" in **Molecular Interactions and Activity in Proteins**. (CIBA Foundation Symposium 60). Excerpta Medica. London, p. 137 (1978).
32. I.D. Campbell, C.M. Dobson, R.G. Ratcliffe, and R.J.P. Williams, "Method for accurate measurement of H-1 spin-spin coupling-constants in large molecules" **J Magn Reson**, 31, 341-345 (1978).
33. I.D. Campbell, C.M. Dobson, R.G. Ratcliffe, and R.J.P. Williams, "Fourier transform NMR pulse methods for measurement of slow-exchange rates" **J Magn Reson**, 29, 397-417 (1978).
34. R. Cassels, C.M. Dobson, F.M. Poulsen, and R.J.P Williams, "Study of the tryptophan residues of lysozyme using 1H nuclear magnetic resonance" **Eur J Biochem**, 92, 81-97 (1978).
35. C.M Dobson, R. Ratcliffe, and R.J.P Williams, "Study of biological compartments in vivo by NMR" **H-S Z Physiol Chem**, 359, 259-259 (1978).
36. C.M. Dobson, S.J. Ferguson, F.M. Poulsen, and R.J.P Williams, "Complete assignment of aromatic 1H nuclear magnetic resonances of the tyrosine residues of hen lysozyme" **Eur J Biochem**, 92, 99-103 (1978).

37. C.M. Dobson, C.F. Geraldes, G. Ratcliffe, and R.J.P Williams, "Nuclear magnetic-resonance studies of 5'-ribonucleotide and 5'-deoxyribonucleotide conformations in solution using the lanthanide probe method" **Eur J Biochem**, 88, 259-266 (1978).

#### 1979

38. I.D. Campbell and C.M. Dobson, "The application of high resolution nuclear magnetic resonance to biological systems" **Methods Biochem Anal**, 25, 1-133 (1979).
39. A. Cave, M. Pages, P. Morin, and C.M. Dobson, "Conformational studies on muscular parvalbumins cooperative binding of calcium (II) to parvalbumins" **Biochimie**, 61, 607-613 (1979).
40. J.L. Costa, C.M. Dobson, K.L. Kirk, F.M. Poulsen, C.R. Valeri, and J.J. Vecchione, "Studies of human platelets by F-19 and P-31 NMR" **FEBS Lett**, 99, 141-146 (1979).
41. R.C. Woodworth and C.M. Dobson, "Selective substitution of H-2 and H-3 into aromatic amino-acids catalyzed by Raney-nickel" **FEBS Lett**, 101, 329-332 (1979).

#### 1980

42. R. Cassels, C.M. Dobson, F.M. Poulsen, R.G. Ratcliffe, and R.J.P. Williams, "Transverse relaxation effects resulting from deuterium exchange in the proton NMR-spectra of proteins" **J Magn Reson**, 37, 141-153 (1980).
43. J.L. Costa, C.M. Dobson, K.L. Kirk, F.M. Poulsen, C.R. Valeri, and J.J. Vecchione, "Nuclear magnetic-resonance studies of blood platelets" **Phil Trans R Soc Lond B**, 289, 413-421 (1980).
44. C.M. Dobson, J.C. Hoch, E.T. Olejniczak, and F.M. Poulsen, "Conformations and conformational dynamics of proteins in solution studied by nuclear magnetic double resonance" **Biophys J**, 32, 625-628 (1980).
45. M.G. Munowitz, C.M. Dobson, R.G. Griffin, and S.C. Harrison, "On the rigidity of RNA in tomato bushy stunt virus" **J Mol Biol**, 141, 327-333 (1980).
46. F.M. Poulsen, J.C. Hoch, and C.M. Dobson, "A structural study of the hydrophobic box region of lysozyme in solution using nuclear Overhauser effects" **Biochemistry - US**, 19, 2597-2607 (1980).
47. D.J. States, C.M. Dobson, M. Karplus, and T.E. Creighton, "A conformational isomer of bovine pancreatic trypsin inhibitor protein produced by refolding" **Nature**, 286, 630-632 (1980).
48. M.E. Wagman, C.M. Dobson, and M. Karplus, "Proton NMR-studies of the association and folding of glucagon in solution" **FEBS Lett**, 119, 265-270 (1980).

#### 1981

49. C.C.F. Blake, R. Cassels, C.M. Dobson, F.M. Poulsen, R.J.P. Williams, and K.S. Wilson, "Structure and binding-properties of hen lysozyme modified at tryptophan-62" **J Mol Biol**, 147, 73-95 (1981).
50. G. Bodenhausen and C.M. Dobson, "Selective removal of magnetization in coupled NMR spectra" **J Magn Reson**, 44, 212-216 (1981).
51. A. Brownmason, C.M. Dobson, and R.C. Woodworth, "Efficient incorporation of deuterated amino-acids into quail egg-white proteins for nuclear magnetic resonance studies" **J Biol Chem**, 256, 1506-1509 (1981).
52. J.L. Costa, C.M. Dobson, D.D. Fay, K.L. Kirk, F.M. Poulsen, C.R. Valeri, and J.J. Vecchione, "Nuclear magnetic-resonance studies of amine storage in pig platelets" **FEBS Lett**, 136, 325-328 (1981).
53. M. Delepierre, C.M. Dobson, J.C. Hoch, E.T. Olejniczak, F.M. Poulsen, R.G. Ratcliffe, and C. Redfield, "Structure and dynamics of proteins by proton NMR. Applications of nuclear Overhauser effects to lysozyme" in **Biomolecular Stereodynamics, Vol. II** (ed. R.H. Sarma). Adenine Press. New York, p. 237 (1981).
54. M. Delepierre, C.M. Dobson, and S.L. Meneer, "Nuclear magnetic shift and relaxation effects resulting from complexation of lanthanide ions with endo-cis-bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid" **J Chem Soc Dalton**, 678-682 (1981).
55. B. Dezube, C.M. Dobson, and C.E. Teague, "Conformational analysis of tryptophan in solution using nuclear magnetic resonance methods" **J Chem Soc Perk T 2**, 730-735 (1981).
56. E.T. Olejniczak, F.M. Poulsen, and C.M. Dobson, "Proton nuclear Overhauser effects and protein dynamics" **J Am Chem Soc**, 103, 6574-6580 (1981).

## 1982

57. M. Delepierre, C.M. Dobson, and F.M. Poulsen, "Studies of beta-sheet structure in lysozyme by proton nuclear magnetic-resonance – Assignments and analysis of spin spin coupling-constants" **Biochemistry - US**, 21, 4756-4761 (1982).
58. C.M. Dobson, "NMR studies of protein dynamics" in **Intramolecular Dynamics** (ed. J. Jortner and B. Pullman). Reidel p. 481 (1982).
59. C.M. Dobson, E.T. Olejniczak, F.M. Poulsen, and R.G. Ratcliffe, "Time development of proton nuclear Overhauser effects in proteins" **J Magn Reson**, 48, 97-110 (1982).
60. J.C. Hoch, C.M. Dobson, and M. Karplus, "Fluctuations and averaging of proton chemical shifts in the bovine pancreatic trypsin-inhibitor" **Biochemistry - US**, 21, 1118-1125 (1982).
61. R.M. Levy, C.M. Dobson, and M. Karplus, "Dipolar NMR relaxation of nonprotonated aromatic carbons in proteins. Structural and dynamical effects" **Biophys J**, 39, 107-113 (1982).

62. M. Munowitz, W.W. Bachovchin, J. Herzfeld, C.M. Dobson, and R.G. Griffin, "Acid-base and tautomeric equilibria in the solid-state – N-15 NMR spectroscopy of histidine and imidazole" **J Am Chem Soc**, 104, 1192-1196 (1982).
63. C. Redfield, F.M. Poulsen, and C.M. Dobson, "Complete assignment of the 1H NMR spectrum of the aromatic residues of lysozyme" **Eur J Biochem**, 128, 527-531 (1982).
64. R.E. Wedin, M. Delepierre, C.M. Dobson, and F.M. Poulsen, "Mechanisms of hydrogen-exchange in proteins from nuclear magnetic resonance studies of individual tryptophan indole NH hydrogens in lysozyme" **Biochemistry**, 21, 1098-1103 (1982).
65. R.C. Woodworth, A. Brown-Mason, C. Redfield, and C.M. Dobson, "Comparison of ovotransferrin half molecules with the intact protein by high resolution nuclear magnetic resonance spectroscopy" in **The Biochemistry and Physiology of Iron** (ed. P. Saltman and J. Heygenauer). Elsevier p. 43 (1982).

### 1983

66. G.A. Bentley, M. Delepierre, C.M. Dobson, R.E. Wedin, S.A. Mason, and F.M. Poulsen, "Exchange of individual hydrogens for a protein in a crystal and in solution" **J Mol Biol**, 170, 243-247 (1983).
67. J. Boyd, C.M. Dobson, and C. Redfield, "Correlation of proton chemical shifts in proteins using two-dimensional double-quantum spectroscopy" **J Magn Reson**, 55, 170-176 (1983).
68. M. Delepierre, C.M. Dobson, S. Selvarajah, R.E. Wedin, and F.M. Poulsen, "Correlation of hydrogen exchange behaviour and thermal stability of lysozyme" **J Mol Biol**, 168, 687-692 (1983).
69. C.M. Dobson, "Studies of Protein Structure and dynamics by proton magnetic resonance" in **Structure and Dynamics: Nucleic Acids and Proteins** (ed. E. Clementi and R.H. Sarma). Adenine Press. New York, p. 451 (1983).
70. C. Redfield, J.C. Hoch, and C.M. Dobson, "Chemical shifts of aromatic protons in protein NMR-spectra" **FEBS Lett**, 159, 132-136 (1983).

### 1984

71. N.J. Clayden, C.M. Dobson, G.W. Groves, C.J. Hayes, and S.A. Rodger, "Solid state NMR studies of cement hydration" **British Ceramic Proceedings**, 55-64 (1984).
72. N.J. Clayden, C.M. Dobson, C.J. Hayes, and S.A. Rodger, "Hydration of tricalcium silicate followed by solid-state Si-29 NMR spectroscopy" **J Chem Soc Chem Comm**, 1396-1397 (1984).
73. M. Delepierre, C.M. Dobson, M.A. Howarth, and F.M. Poulsen, "Identification using 1H NMR spectroscopy of slowly exchanging amide hydrogens of hen lysozyme in solution" **Eur J Biochem**, 145, 389-395 (1984).
74. C.M. Dobson and P.A. Evans, "Protein folding kinetics from magnetization transfer nuclear magnetic-resonance" **Biochemistry**, 23, 4267-4270 (1984).

75. C.M. Dobson, P.A. Evans, and K.L. Williamson, "Proton NMR studies of denatured lysozyme" **FEBS Lett**, 168, 331-334 (1984).
76. C.M. Dobson, M.A. Howarth, and C. Redfield, "Nuclear Overhauser effects and the assignment of the proton NMR spectra of proteins" **FEBS Lett**, 176, 307-312 (1984).
77. T.H. Huang, W.W. Bachovchin, R.G. Griffin, and C.M. Dobson, "High-resolution N-15 nuclear magnetic-resonance studies of alpha-lytic protease in solid-state – Direct comparison of enzyme structure in solution and in the solid-state" **Biochemistry - US**, 23, 5933-5937 (1984).
78. M.G. Munowitz, T.H. Huang, C.M. Dobson, and R.G. Griffin, "High-resolution dilute spin dipolar NMR spectroscopy in the solid-state" **J Magn Reson**, 57, 56-64 (1984).
79. E.T. Olejniczak, C.M. Dobson, M. Karplus, and R.M. Levy, "Motional averaging of proton nuclear Overhauser effects in proteins – Predictions from a molecular-dynamics simulation of lysozyme" **J Am Chem Soc**, 106, 1923-1930 (1984).
80. E.T. Olejniczak, F.M. Poulsen, and C.M. Dobson, "Distance dependence of proton nuclear Overhauser effects in proteins" **J Magn Reson**, 59, 518-523 (1984).
81. D.J. States, C.M. Dobson, M. Karplus, and T.E. Creighton, "A new 2-disulfide intermediate in the refolding of reduced bovine pancreatic trypsin inhibitor" **J Mol Biol**, 174, 411-418 (1984).

#### 1985

82. J.R. Barnes, A.D.H. Clague, N.J. Clayden, C.M. Dobson, C.J. Hayes, G.W. Groves, and S.A. Rodger, "Hydration of Portland cement followed by Si-29 solid-state NMR spectroscopy" **J Mater Sci Lett**, 4, 1293-1295 (1985).
83. J. Boyd, C.M. Dobson, and C. Redfield, "Correlation of aliphatic proton chemical-shifts in proteins using two-dimensional double-quantum correlated spectroscopy" **J Magn Reson**, 62, 543-550 (1985).
84. J. Boyd, C.M. Dobson, and C. Redfield, "Identification of glycine spin systems in <sup>1</sup>H NMR spectra of proteins using multiple quantum coherences" **FEBS Lett**, 186, 35-40 (1985).
85. J. Boyd, C.M. Dobson, and C. Redfield, "Assignment of resonances in the <sup>1</sup>H NMR spectrum of human lysozyme" **Eur J Biochem**, 153, 383-396 (1985).
86. I.D. Campbell, C.M. Dobson, and R.J. Williams, "The study of conformational states of proteins by nuclear magnetic resonance" **Biochem J**, 231, 1-10 (1985).
87. N.J. Clayden, C.M. Dobson, K.P. Hall, D.M.P. Mingos, and D.J. Smith, "Studies of gold cluster compounds using high-resolution P-31 solid-state nuclear magnetic-resonance spectroscopy" **J Chem Soc Dalton**, 1811-1814 (1985).

88. C.M. Dobson, P.A. Evans, and R.O. Fox, "Proton NMR studies of protein folding and unfolding" in **Magnetic Resonance in Biology and Medicine** (ed. E. Clementi and R.H. Sarma). Tate-McGraw Hill. Bombay, p. 183 (1985).
89. C.M. Dobson, P.A. Evans, and R.O. Fox, "Proton NMR studies of protein folding and unfolding" in **Structure and Motion: Membranes, Nucleic Acids and Proteins** (ed. G. Govil, C.L. Khetrapal, and A. Saran). Adenine Press. New York, p. 265 (1985).
90. J.W. Fett, D.J. Strydom, R.R. Lobb, E.M. Alderman, B.L. Vallee, P.J. Artymiuk, S. Collett, D.C. Phillips, C.M. Dobson, and C. Redfield, "Lysozyme: a major secretory product of a human colon carcinoma cell line" **Biochemistry**, 24, 965-975 (1985).
91. J.C. Hoch, C.M. Dobson, and M. Karplus, "Vicinal coupling-constants and protein dynamics" **Biochemistry**, 24, 3831-3841 (1985).
92. R.J.B. Jakeman, A.K. Cheetham, N.J. Clayden, and C.M. Dobson, "A P-31 magic angle spinning NMR-study of the cation distribution in  $Zn_3-XMgX(PO_4)_2$ " **J Am Chem Soc**, 107, 6249-6252 (1985).
93. J. Klinowski, X. Liu, R. Penzhorn, P. Schuster, N.J. Clayden, and C.M. Dobson, "Silicon-29 magic angle spinning nuclear magnetic resonance study of the crystalline-amorphous transition of zeolite a containing trapped krypton" **J Chem Soc Faraday I**, 81, 1435-1440 (1985).
94. E.T. Olejniczak, J.C. Hoch, C.M. Dobson, and F.M. Poulsen, "Quantitative measurement using pure-phase two-dimensional exchange spectroscopy" **J Magn Reson**, 64, 199-206 (1985).
95. C. Redfield, C.M. Dobson, R.M. Scheek, S. Stob, and R. Kaptein, "Surface accessibility of aromatic residues in human lysozyme using photochemically induced dynamic nuclear polarization NMR spectroscopy" **FEBS Lett**, 185, 248-252 (1985).

#### 1986

96. V.D. Alexiev, N.J. Clayden, S.L. Cook, C.M. Dobson, J. Evans, and D.J. Smith, "Solid-state P-31 NMR spectroscopy of surface-attached triosmium clusters" **J Chem Soc Chem Comm**, 938-941 (1986).
97. J.R. Barnes, A.D.H. Clague, N.J. Clayden, C.M. Dobson, and R.B. Jones, "The application of  $^{29}Si$  and  $^{27}Al$  solid state NMR spectroscopy to characterising minerals in coals" **Fuel**, 65, 437-441 (1986).
98. A.K. Cheetham, N.J. Clayden, C.M. Dobson, and R.J.B. Jakeman, "Correlations between P-31 NMR chemical shifts and structural parameters in crystalline inorganic phosphates" **J Chem Soc Chem Comm**, 195-197 (1986).
99. N.J. Clayden, C.M. Dobson, L.Y. Lian, and D.J. Smith, "Chemical shift tensor analyses and simulations of slow-spinning MAS NMR spectra" **J Magn Reson**, 69, 476-487 (1986).



100. N.J. Clayden, C.M. Dobson, L.Y. Lian, and J.M. Twyman, "A solid-state C-13 nuclear magnetic resonance study of the conformational states of penicillins" **J Chem Soc Perk T 2**, 1933-1940 (1986).
101. C.M. Dobson and M. Karplus, "Internal motion of proteins: nuclear magnetic resonance measurements and dynamic simulations" **Methods Enzymol**, 131, 362-389 (1986).
102. C.M. Dobson, L.Y. Lian, C. Redfield, and K.D. Topping, "Measurement of hydrogen-exchange rates using 2D NMR spectroscopy" **J Magn Reson**, 69, 201-209 (1986).
103. R.O. Fox, P.A. Evans, and C.M. Dobson, "Multiple conformations of a protein demonstrated by magnetization transfer NMR spectroscopy" **Nature**, 320, 192-194 (1986).
104. C.B. Post, B.R. Brooks, M. Karplus, C.M. Dobson, P.J. Artymiuk, J.C. Cheetham, and D.C. Phillips, "Molecular dynamics simulations of native and substrate-bound lysozyme – A study of the average structures and atomic fluctuations" **J Mol Biol**, 190, 455-479 (1986).

#### 1987

105. A.K. Cheetham, C.M. Dobson, C.P. Grey, and R.J.B. Jakeman, "Paramagnetic shift probes in high-resolution solid-state NMR" **Nature**, 328, 706-707 (1987).
106. N.J. Clayden, C.M. Dobson, S.J. Heyes, and P.J. Wiseman, "H-2 NMR-studies of metallocenes in host lattices" **J Inclusion Phenom**, 5, 65-68 (1987).
107. M. Delepierre, C.M. Dobson, M. Karplus, F.M. Poulsen, D.J. States, and R.E. Wedin, "Electrostatic effects and hydrogen exchange behaviour in proteins. The pH dependence of exchange rates in lysozyme" **J Mol Biol**, 197, 111-130 (1987).
108. C.M. Dobson and P.A. Evans, "Proton NMR studies of protein dynamics and folding: Applications of magnetization transfer NMR" in **Structure and Dynamics of Nucleic Acids, Proteins and Membranes** (ed. E. Clementi and S. Chin). Plenum Press. New York, p. 127 (1987).
109. C.M. Dobson, P.A. Evans, R.O. Fox, C. Redfield and K.D. Topping, "Two-Dimensional Exchange Experiments in NMR Studies of Protein Dynamics and Folding", **Prot. Biol. Fluids**, **35**, 433 (1987).
110. C.M. Dobson and L.Y. Lian, "A 31P MAS NMR study of cytidine 2'-phosphate bound to ribonuclease A in the crystalline state" **FEBS Lett**, 225, 183-187 (1987).
111. P.A. Evans, C.M. Dobson, and R.O. Fox, "NMR and site-directed mutagenesis reveal the effects of proline isomerism in both the folded and unfolded states of a protein" **Protein Eng**, 1, 231-231 (1987).
112. P.A. Evans, C.M. Dobson, R.A. Kautz, G. Hatfull, and R.O. Fox, "Proline isomerism in staphylococcal nuclease characterized by NMR and site-directed mutagenesis" **Nature**, 329, 266-268 (1987).

113. S.J. Heyes, N.J. Clayden, C.M. Dobson, M.L.H. Green, and P.J. Wiseman, "Structure and dynamics of cobaltocene intercalated in tantalum disulfide investigated by H-2 NMR-spectroscopy" **J Chem Soc Chem Comm**, 1560-1562 (1987).
114. D.J. States, T.E. Creighton, C.M. Dobson, and M. Karplus, "Conformations of intermediates in the folding of the pancreatic trypsin inhibitor" **J Mol Biol**, 195, 731-739 (1987).

#### 1988

115. V.D. Alexiev, N. Binsted, S.L. Cook, J. Evans, R.J. Price, N.J. Clayden, C.M. Dobson, D.J. Smith, and G.N. Greaves, "Synthesis, characterization, and catalytic activity of a phosphinidene stabilized tethered triruthenium cluster" **J Chem Soc Dalton**, 2649-2654 (1988).
116. J. Baum, C.M. Dobson, P.A. Evans, C. Hanley, and K.D. Topping, "Structural studies of unfolded and partly folded proteins using NMR spectroscopy" in **Biological and Artificial Intelligence Systems**. (ESCOM Science Publishers). ESCOM. Leiden, p. 57 (1988).
117. C.M. Dobson and P.A. Evans, "Protein structure – Trapping folding intermediates" **Nature**, 335, 666-667 (1988).
118. C.M. Dobson, D.G.C. Goberdhan, J.D.F. Ramsay, and S.A. Rodger, "Si-29 MAS NMR study of the hydration of tricalcium silicate in the presence of finely divided silica" **J Mater Sci**, 23, 4108-4114 (1988).
119. T.C. King, C.M. Dobson, and S.A. Rodger, "Hydration of tricalcium silicate with D<sub>2</sub>O" **J Mater Sci Lett**, 7, 861-863 (1988).
120. C. Redfield and C.M. Dobson, "Sequential 1H NMR assignments and secondary structure of hen egg white lysozyme in solution" **Biochemistry**, 27, 122-136 (1988).
121. S.A. Rodger, G.W. Groves, N.J. Clayden, and C.M. Dobson, "Hydration of tricalcium silicate by Si-29 NMR with cross-polarization" **J Am Ceram Soc**, 71, 91-96 (1988).
122. J J.M. Twyman and C.M. Dobson, "Aromatic ring dynamics in crystalline penicillins from variable temperature C-13 cross-polarization magic angle spinning NMR" **J Chem Soc Chem Comm**, 786-788 (1988).

#### 1989

123. J. Baum, C.M. Dobson, P.A. Evans, and C. Hanley, "Characterization of a partly folded protein by NMR methods: Studies on the molten globule state of guinea pig  $\alpha$ -lactalbumin" **Biochemistry**, 28, 7-13 (1989).
124. M.J. Bogusky, C.M. Dobson, and R.A. Smith, "Reversible independent unfolding of the domains of urokinase monitored by 1H NMR" **Biochemistry**, 28, 6728-6735 (1989).

125. N.J. Clayden, C.M. Dobson, and A. Fern, "High-resolution solid-state Sn-119 nuclear magnetic resonance spectroscopy of ternary tin oxides" **J Chem Soc Dalton**, 843-847 (1989).
126. C.M. Dobson, "NMR studies of protein dynamics and folding" in **Protein Structure and Engineering** (ed. e.O. Jardetzky). (NATO ASI Series). Plenum Publishing Corporation. New York, p. 193 (1989).
127. P.A. Evans, R.A. Kautz, R.O. Fox, and C.M. Dobson, "A magnetization transfer nuclear magnetic resonance study of the folding of staphylococcal nuclease" **Biochemistry**, 28, 362-370 (1989).
128. C.P. Grey, C.M. Dobson, A.K. Cheetham, and R.J.B. Jakeman, "Studies of rare earth stannates by Sn-119 MAS NMR – The use of paramagnetic shift probes in the solid state" **J Am Chem Soc**, 111, 505-511 (1989).
129. R.J.B. Jakeman, A.K. Cheetham, N.J. Clayden, and C.M. Dobson, "A magic angle spinning NMR-study of the phase-diagram  $\text{Ca}_3\text{-XZnX}(\text{PO}_4)_2$ " **J Solid State Chem**, 78, 23-34 (1989).
130. R.E. Oswald, M.J. Bogusky, M. Bamberger, R.A. Smith, and C.M. Dobson, "Dynamics of the multidomain fibrinolytic protein urokinase from two-dimensional NMR" **Nature**, 337, 579-582 (1989).
131. C.B. Post, C.M. Dobson, and M. Karplus, "A molecular dynamics analysis of protein structural elements" **Proteins**, 5, 337-354 (1989).

#### 1990

132. D.B. Archer, D.J. Jeenes, D.A. MacKenzie, G. Brightwell, N. Lambert, G. Lowe, S.E. Radford, and C.M. Dobson, "Hen egg white lysozyme expressed in, and secreted from, *Aspergillus niger* is correctly processed and folded" **Biotechnology (NY)**, 8, 741-745 (1990).
133. A.N. Clayton, C.M. Dobson, and C.P. Grey, "High-resolution C-13 MAS NMR spectra of paramagnetic lanthanide complexes" **J Chem Soc Chem Comm**, 72-74 (1990).
134. C.M. Dobson, "Hinge-bending and folding" **Nature**, 348, 198-199 (1990).
135. C.P. Grey, M.E. Smith, A.K. Cheetham, C.M. Dobson, and R. Dupree, "Y-89 MAS NMR-study of rare earth pyrochlores – Paramagnetic shifts in the solid-state" **J Am Chem Soc**, 112, 4670-4675 (1990).
136. S.J. Heyes and C.M. Dobson, "C-13 cross-polarization magic angle spinning and H-2 NMR-studies of the structure and dynamics of the (deoxycholic acid) 2-ferrocene inclusion compound" **Magn Reson Chem**, 28, S37-S46 (1990).
137. C.B. Post, C.M. Dobson, and M. Karplus, "Lysozyme hydrolysis of beta-glucosides – A consensus between binding interactions and mechanism" **ACS Sym Ser**, 430, 377-388 (1990).
138. C.B. Post, C.M. Dobson, and M. Karplus, "Lysozyme hydrolysis of  $\beta$ -glycosides: A consensus between binding interactions and mechanism" in **Computer**

**Modeling of Carbohydrate Molecules** (ed. A.D. French and J. Brady). ACS Books p. 377-388 (1990).

139. C. Redfield and C.M. Dobson, "1H NMR studies of human lysozyme: spectral assignment and comparison with hen lysozyme" **Biochemistry**, 29, 7201-7214 (1990).
140. J.M. Twyman and C.M. Dobson, "Aromatic ring dynamics in crystalline molecular solids by one-dimensional and 2-dimensional exchange spectroscopy" **Magn Reson Chem**, 28, 163-170 (1990).

#### 1991

141. R.W. Broadhurst, C.M. Dobson, P.J. Hore, S.E. Radford, and M.L. Rees, "A photochemically induced dynamic nuclear polarization study of denatured states of lysozyme" **Biochemistry**, 30, 405-412 (1991).
142. S.S.D. Brown, I.D. Salter, D.J. Smith, N.J. Clayden, and C.M. Dobson, "High-resolution P-31-(H-1) nuclear-magnetic-resonance studies of group-1B metal heteronuclear cluster compounds in the solid-state" **J Organomet Chem**, 408, 439-450 (1991).
143. J.C. Cheetham, D.P. Raleigh, R.E. Griest, C. Redfield, C.M. Dobson, and A.R. Rees, "Antigen mobility in the combining site of an anti-peptide antibody" **Proc Natl Acad Sci USA**, 88, 7968-7972 (1991).
144. J.C. Cheetham, C. Redfield, R.E. Griest, D.P. Raleigh, C.M. Dobson, and A.R. Rees, "Use of two-dimensional 1H nuclear magnetic resonance to study high-affinity antibody-peptide interactions" **Methods Enzymol**, 203, 202-228 (1991).
145. C.M. Dobson, "NMR spectroscopy and protein folding: studies of lysozyme and alpha-lactalbumin" **Ciba Found Symp**, 161, 167-181 (1991).
146. C.M. Dobson, "Characterization of protein folding intermediates" **Curr Opin Struct Biol**, 1, 22-27 (1991).
147. C.M. Dobson, C. Hanley, S.E. Radford, J. Baum, and P.A. Evans, "Characterisation of unfolded and partially folded states of proteins by NMR spectroscopy" in **Conformations and Forces in Protein Folding** (ed. B.T. Nall and K.A. Dill). AAAS. Washington, p. 175 (1991).
148. P.A. Evans, K.D. Topping, D.N. Woolfson, and C.M. Dobson, "Hydrophobic clustering in nonnative states of a protein: interpretation of chemical shifts in NMR spectra of denatured states of lysozyme" **Proteins**, 9, 248-266 (1991).
149. G.W. Groves, A. Brough, I.G. Richardson, and C.M. Dobson, "Progressive changes in the structure of hardened C3S cement pastes due to carbonation" **J Am Ceram Soc**, 74, 2891-2896 (1991).
150. S.J. Heyes, N.J. Clayden, and C.M. Dobson, "Ferrocene molecular reorientation in the (thiourea)<sub>3</sub>ferrocene inclusion compound as studied by H-2 NMR-spectroscopy" **J Phys Chem -US**, 95, 1547-1554 (1991).

151. S.J. Heyes and C.M. Dobson, "C-13 CP MAS NMR-studies of the stereochemical nonrigidity of titanium tetracyclopentadienyl in the solid-state" **J Am Chem Soc**, 113, 463-469 (1991).
152. S.J. Heyes, M.A. Gallop, B.F.G. Johnson, J. Lewis, and C.M. Dobson, "Kinetic analysis of the stereochemical nonrigidity of the triosmium  $\mu$ -3-arene/alkene complex  $\text{Os}_3(\text{CO})_8(\eta^2\text{-CH}_2\text{CH}_2)(\mu_3\text{-}\eta^2\text{-}\eta^2\text{-}\eta^2\text{-C}_6\text{H}_6)$  in the solid state by  $^{13}\text{C}$  CP/MAS NMR spectroscopy" **Inorg Chem**, 30, 3850-3856 (1991).
153. S.J. Heyes, M.L.H. Green, and C.M. Dobson, "C-13 and P-31 CP/MAS NMR-studies of the polytopal ligand rearrangement process of tungsten tris(trimethylphosphine)hexahydride in the solid-state" **Inorg Chem**, 30, 1930-1937 (1991).
154. A. Miranker, S.E. Radford, M. Karplus, and C.M. Dobson, "Demonstration by NMR of folding domains in lysozyme" **Nature**, 349, 633-636 (1991).
155. R.E. Oswald, M.J. Sutcliffe, M. Bamberger, R.H. Loring, E. Braswell, and C.M. Dobson, "Solution structure of neuronal bungarotoxin determined by two-dimensional NMR spectroscopy: sequence-specific assignments, secondary structure, and dimer formation" **Biochemistry**, 30, 4901-4909 (1991).
156. T.G. Pedersen, B.W. Sigurskjold, K.V. Andersen, M. Kjaer, F.M. Poulsen, C.M. Dobson, and C. Redfield, "A nuclear magnetic resonance study of the hydrogen-exchange behaviour of lysozyme in crystals and solution" **J Mol Biol**, 218, 413-426 (1991).
157. S.E. Radford, D.N. Woolfson, S.R. Martin, G. Lowe, and C.M. Dobson, "A three-disulphide derivative of hen lysozyme. Structure, dynamics and stability" **Biochem J**, 273(Pt 1), 211-217 (1991).
158. C. Redfield, L.J. Smith, J. Boyd, G.M. Lawrence, R.G. Edwards, R.A. Smith, and C.M. Dobson, "Secondary structure and topology of human interleukin 4 in solution" **Biochemistry**, 30, 11029-11035 (1991).
159. L.J. Smith, M.J. Sutcliffe, C. Redfield, and C.M. Dobson, "Analysis of phi and chi 1 torsion angles for hen lysozyme in solution from  $^1\text{H}$  NMR spin-spin coupling constants" **Biochemistry**, 30, 986-996 (1991).
160. M.J. Sutcliffe and C.M. Dobson, "Relaxation data in NMR structure determination: model calculations for the lysozyme- $\text{Gd}^{3+}$  complex" **Proteins**, 10, 117-129 (1991).
161. A.J. Teuten, R.A. Smith, and C.M. Dobson, "Domain interactions in human plasminogen studied by proton NMR" **FEBS Lett**, 278, 17-22 (1991).
162. J.M. Twyman, J. Fattah, and C.M. Dobson, "Observation of discrete thiazolidine ring conformations in frozen aqueous solutions of penicillins by C-13 CP-MAS NMR-spectroscopy" **J Chem Soc Chem Comm**, 647-649 (1991).

## 1992

163. A.T. Alexandrescu, R.W. Broadhurst, C. Wormald, C.L. Chyan, J. Baum, and C.M. Dobson, " $^1\text{H}$ -NMR assignments and local environments of aromatic

- residues in bovine, human and guinea pig variants of alpha-lactalbumin" **Eur J Biochem**, 210, 699-709 (1992).
164. A.R. Brough, C.P. Grey, and C.M. Dobson, "Structural information from NMR-studies of paramagnetic solids – Na-23 MAS spectra of sodium lanthanide salts of ethylenediaminetetraacetic acid" **J Chem Soc Chem Comm**, 742-743 (1992).
165. A. Cooper, S.J. Eyles, S.E. Radford, and C.M. Dobson, "Thermodynamic consequences of the removal of a disulphide bridge from hen lysozyme" **J Mol Biol**, 225, 939-943 (1992).
166. C.M. Dobson, "Unfolded proteins, compact states and molten globules" **Curr Opin Struct Biol**, 2, 6-12 (1992).
167. C.M. Dobson, "Resting places on folding pathways" **Curr Biol**, 2, 343-345 (1992).
168. J. Fattah, J.M. Twyman, and C.M. Dobson, "A variable-temperature C-13 cross-polarization magic angle spinning NMR-study of some unusual dynamic and phase properties of (+/-)-3,4-di-O-acetyl-1,2,5,6-tetra-O-benzyl-myoinositol, jumping crystals" **Magn Reson Chem**, 30, 606-615 (1992).
169. M.A. Gallop, B.F.G. Johnson, J. Keeler, J. Lewis, S.J. Heyes, and C.M. Dobson, "Organometallic helicopters – Stereochemical nonrigidity of Mu-3-arene/olefin trisium complexes in solution and the solid-state" **J Am Chem Soc**, 114, 2510-2520 (1992).
170. C.P. Grey, C.M. Dobson, and A.K. Cheetham, "Susceptibility matching in MAS NMR – The determination of hyperfine tensors from paramagnetic stannates" **Magn Reson**, 98, 414-420 (1992).
171. S.J. Heyes, N.J. Clayden, and C.M. Dobson, "<sup>13</sup>C-CP/MAS NMR studies of the cyclomalto-oligosaccharide (cyclodextrin) hydrates" **Carbohydr Res**, 233, 1-14 (1992).
172. S.J. Heyes and C.M. Dobson, "C-13 CP MAS NMR-study of the inclusion polymerization of 2,3-dimethylbutadiene in deoxycholic-acid" **Macromolecules**, 25, 3617-3623 (1992).
173. X. Li, R.A. Smith, and C.M. Dobson, "Sequential <sup>1</sup>H NMR assignments and secondary structure of the kringle domain from urokinase" **Biochemistry**, 31, 9562-9571 (1992).
174. X. Li, M.J. Sutcliffe, T.W. Schwartz, and C.M. Dobson, "Sequence-specific <sup>1</sup>H NMR assignments and solution structure of bovine pancreatic polypeptide" **Biochemistry**, 31, 1245-1253 (1992).
175. K.J. Lumb, R.T. Aplin, S.E. Radford, D.B. Archer, D.J. Jeenes, N. Lambert, D.A. MacKenzie, C.M. Dobson, and G. Lowe, "A study of D52S hen lysozyme-GlcNAc oligosaccharide complexes by NMR spectroscopy and electrospray mass spectrometry" **FEBS Lett**, 296, 153-157 (1992).
176. K.J. Lumb and C.M. Dobson, "<sup>1</sup>H nuclear magnetic resonance studies of the interaction of urea with hen lysozyme. Origins of the conformational change

- induced in hen lysozyme by N-acetylglucosamine oligosaccharides" **J Mol Biol**, 227, 9-14 (1992).
177. S.E. Radford, M. Buck, K.D. Topping, C.M. Dobson, and P.A. Evans, "Hydrogen-exchange in native and denatured states of hen egg-white lysozyme" **Proteins**, 14, 237-248 (1992).
178. S.E. Radford, C.M. Dobson, and P.A. Evans, "The folding of hen lysozyme involves partially structured intermediates and multiple pathways" **Nature**, 358, 302-307 (1992).
179. D.P. Raleigh, P.A. Evans, M. Pitkeathly, and C.M. Dobson, "A peptide model for proline isomerism in the unfolded state of staphylococcal nuclease" **J Mol Biol**, 228, 338-342 (1992).
180. D.P. Raleigh, C.P. Grey, N. Soffe, and C.M. Dobson, "Multiple-frequency decoupling in magic-angle-spinning NMR of paramagnetic solids" **J Magn Reson**, 97, 162-170 (1992).
181. C. Redfield, J. Boyd, L.J. Smith, R.A. Smith, and C.M. Dobson, "Loop mobility in a four-helix-bundle protein: <sup>15</sup>N NMR relaxation measurements on human interleukin-4" **Biochemistry**, 31, 10431-10437 (1992).
182. I.N. Roberts, D.A. Mackenzie, D.J. Jeenes, D.B. Archer, S.E. Radford, C.V. Robinson, R.T. Aplin, and C.M. Dobson, "Production of N-15-labeled hen egg-white lysozyme using *Aspergillus Niger*" **Biotechnol Lett**, 14, 897-902 (1992).
183. L.J. Smith, C. Redfield, J. Boyd, G.M. Lawrence, R.G. Edwards, R.A. Smith, and C.M. Dobson, "Human interleukin 4. The solution structure of a four-helix bundle protein" **J Mol Biol**, 224, 899-904 (1992).
184. M.J. Sutcliffe, C.M. Dobson, and R.E. Oswald, "Solution structure of neuronal bungarotoxin determined by two-dimensional NMR spectroscopy: calculation of tertiary structure using systematic homologous model building, dynamical simulated annealing, and restrained molecular dynamics" **Biochemistry**, 31, 2962-2970 (1992).

### 1993

185. A.T. Alexandrescu, P.A. Evans, M. Pitkeathly, J. Baum, and C.M. Dobson, "Structure and dynamics of the acid-denatured molten globular state of alpha-lactalbumin – A 2-dimensional NMR-study" **Biochemistry**, 32, 1707-1718 (1993).
186. K. Bartik, C.M. Dobson, and C. Redfield, "<sup>1</sup>H NMR analysis of turkey egg-white lysozyme and comparison with hen egg-white lysozyme" **Eur J Biochem**, 215, 255-266 (1993).
187. A.R. Brough, C.P. Grey, and C.M. Dobson, "Paramagnetic ions as structural probes in solid-state NMR – Distance measurements in crystalline lanthanide-acetates" **J Am Chem Soc**, 115, 7318-7327 (1993).
188. M. Buck, S.E. Radford, and C.M. Dobson, "A partially folded state of hen egg white lysozyme in trifluoroethanol: structural characterization and implications for protein folding" **Biochemistry**, 32, 669-678 (1993).

189. C.L. Chyan, C. Wormald, C.M. Dobson, P.A. Evans, and J. Baum, "Structure and stability of the molten globule state of guinea-pig alpha-lactalbumin – A hydrogen-exchange study" **Biochemistry**, 32, 5681-5691 (1993).
190. C.M. Dobson, "Flexible friends" **Curr Biol**, 3, 530-532 (1993).
191. C.M. Dobson, "Folding and binding" **Curr Opin Struct Biol**, 3, 57-59 (1993).
192. J. Fattah, J.M. Twyman, S.J. Heyes, D.J. Watkin, A.J. Edwards, K. Prout, and C.M. Dobson, "Combination of CP MAS NMR and X-ray crystallography – Structure and dynamics in a low symmetry molecular crystal, potassium penicillin-V" **J Am Chem Soc**, 115, 5636-5650 (1993).
193. C.P. Grey, A.K. Cheetham, and C.M. Dobson, "Temperature-dependent solid-state Sn-119 MAS NMR of  $\text{Nd}_2\text{Sn}_2\text{O}_7$ ,  $\text{Nd}_2\text{Sn}_2\text{O}_7$ ,  $\text{Sm}_2\text{Sn}_2\text{O}_7$ , and  $\text{Y}_{1.8}\text{Sm}_{0.2}\text{Sn}_2\text{O}_7$  - 3 Sensitive chemical shift thermometers" **J Magn Reson Ser A**, 101, 299-306 (1993).
194. A. Miranker, C.V. Robinson, S.E. Radford, R.T. Aplin, and C.M. Dobson, "Detection of transient protein folding populations by mass spectrometry" **Science**, 262, 896-900 (1993).
195. U.K. Nowak, X. L, A.J. Teuten, R.A. Smith, and C.M. Dobson, "NMR studies of the dynamics of the multidomain protein urokinase-type plasminogen activator" **Biochemistry**, 32, 298-309 (1993).
196. J.P. O'Connell, S.M. Kelly, D.P. Raleigh, J.A. Hubbard, N.C. Price, C.M. Dobson, and B.J. Smith, "On the role of the C-terminus of alpha-calcitonin-gene-related peptide (alpha CGRP). The structure of des-phenylalaninamide<sup>37</sup>-alpha CGRP and its interaction with the CGRP receptor" **Biochem J**, 291 (Pt 1), 205-210 (1993).
197. I.G. Richardson, A.R. Brough, R. Brydson, G.W. Groves, and C.M. Dobson, "Location of aluminium in substituted calcium silicate hydrate (C-S-H) gels as determined by Si-29 and Al-27 NMR and EELS" **J Am Ceram Soc**, 76, 2285-2288 (1993).
198. I.G. Richardson, G.W. Groves, A.R. Brough and C.M. Dobson, "The carbonation of OPC and OPC/silica fume hardened cement pastes in air under conditions of fixed humidity" **Adv Cement Res**, 5, 81-86 (1993).
199. L.J. Smith, M.J. Sutcliffe, C. Redfield, and C.M. Dobson, "Structure of hen lysozyme in solution" **J Mol Biol**, 229, 930-944 (1993).
200. J.E. Taguchi, S.J. Heyes, D. Barford, L.N. Johnson, and C.M. Dobson, "Solid state <sup>31</sup>P cross-polarization/magic angle sample spinning nuclear magnetic resonance of crystalline glycogen phosphorylase b" **Biophys J**, 64, 492-501 (1993).
201. A.J. Teuten, R.W. Broadhurst, R.A. Smith, and C.M. Dobson, "Characterization of structural and folding properties of streptokinase by n.m.r. spectroscopy" **Biochem J**, 290, 313-319 (1993).



202. A.J. Teuten, A. Cooper, R.A. Smith, and C.M. Dobson, "Binding of a substrate analogue can induce co-operative structure in the plasmin serine-proteinase domain" **Biochem J**, 293, 567-572 (1993).
203. H. Van Dael, P. Haezebrouck, L. Morozova, C. Arico-Muendel, and C.M. Dobson, "Partially folded states of equine lysozyme. Structural characterization and significance for protein folding" **Biochemistry**, 32, 11886-11894 (1993).

#### 1994

204. A.T. Alexandrescu, Y.L. Ng, and C.M. Dobson, "Characterization of a trifluoroethanol induced partially folded state of alpha-lactalbumin" **J Mol Biol**, 235, 587-599 (1994).
205. K. Bartik, C. Redfield, and C.M. Dobson, "Measurement of the individual pKa values of acidic residues of hen and turkey lysozymes by two-dimensional <sup>1</sup>H NMR" **Biophys J**, 66, 1180-1184 (1994).
206. A.R. Brough, C.M. Dobson, I.G. Richardson, and G.W. Groves, "Application of selective Si-29 isotopic enrichment to studies of the structure of calcium silicate hydrate (C-S-H) gels" **J Am Ceram Soc**, 77, 593-596 (1994).
207. A.R. Brough, C.M. Dobson, I.G. Richardson, and G.W. Groves, "In situ solid state NMR-studies of Ca<sub>2</sub>SiO<sub>5</sub> – Hydration at room-temperature and at elevated temperatures using Si-29 enrichment" **J Mater Sci**, 29, 3926-3940 (1994).
208. M. Buck, S.E. Radford, and C.M. Dobson, "Amide hydrogen exchange in a highly denatured state. Hen egg-white lysozyme in urea" **J Mol Biol**, 237, 247-254 (1994).
209. C.M. Dobson, "Protein folding. Solid evidence for molten globules" **Curr Biol**, 4, 636-640 (1994).
210. C.M. Dobson, P.A. Evans, and S.E. Radford, "Understanding how proteins fold – The lysozyme story so far" **Trends Biochem Sci**, 19, 31-37 (1994).
211. S.J. Eyles, S.E. Radford, C.V. Robinson, and C.M. Dobson, "Kinetic consequences of the removal of a disulfide bridge on the folding of hen lysozyme" **Biochemistry**, 33, 13038-13048 (1994).
212. A.T. Hadfield, D.J. Harvey, D.B. Archer, D.A. MacKenzie, D.J. Jeenes, S.E. Radford, G. Lowe, C.M. Dobson, and L.N. Johnson, "Crystal structure of the mutant D52S hen egg white lysozyme with an oligosaccharide product" **J Mol Biol**, 243, 856-872 (1994).
213. S.D. Hooke, S.E. Radford, and C.M. Dobson, "The refolding of human lysozyme: a comparison with the structurally homologous hen lysozyme" **Biochemistry**, 33, 5867-5876 (1994).
214. L.S. Itzhaki, P.A. Evans, C.M. Dobson, and S.E. Radford, "Tertiary interactions in the folding pathway of hen lysozyme: kinetic studies using fluorescent probes" **Biochemistry**, 33, 5212-5220 (1994).

215. X. Li, A.M. Bokman, M. Llinás, R.A. Smith, and C.M. Dobson, "Solution structure of the kringle domain from urokinase type plasminogen activator" **J Mol Biol**, 235, 1548-1559 (1994).
216. K.J. Lumb, J.C. Cheetham, and C.M. Dobson, "1H nuclear magnetic resonance studies of hen lysozyme-N-acetylglucosamine oligosaccharide complexes in solution. Application of chemical shifts for the comparison of conformational changes in solution and in the crystal" **J Mol Biol**, 235, 1072-1087 (1994).
217. U.K. Nowak, A. Cooper, D. Saunders, R.A. Smith, and C.M. Dobson, "Unfolding studies of the protease domain of urokinase-type plasminogen activator: the existence of partly folded states and stable subdomains" **Biochemistry**, 33, 2951-2960 (1994).
218. U.K. Nowak, R.A.G. Smith, and C.M. Dobson, "NMR-studies on urokinase-type plasminogen-activator" **J Cell Biochem**, 159-159 (1994).
219. C. Redfield, L.J. Smith, J. Boyd, G.M. Lawrence, R.G. Edwards, C.J. Gershater, R.A. Smith, and C.M. Dobson, "Analysis of the solution structure of human interleukin-4 determined by heteronuclear three-dimensional nuclear magnetic resonance techniques" **J Mol Biol**, 238, 23-41 (1994).
220. C. Redfield, R.A. Smith, and C.M. Dobson, "Structural characterization of a highly-ordered 'molten globule' at low pH" **Nat Struct Biol**, 1, 23-29 (1994).
221. I.G. Richardson, A.R. Brough, G.W. Groves, and C.M. Dobson, "The characterization of hardened alkali-activated blast-furnace slag pastes and the nature of the calcium silicate hydrate (C-S-H) phase" **Cement Concrete Res**, 24, 813-829 (1994).
222. C.V. Robinson, M. Gross, S.J. Eyles, J.J. Ewbank, M. Mayhew, F.U. Hartl, C.M. Dobson, and S.E. Radford, "Conformation of GroEL-bound alpha-lactalbumin probed by mass spectrometry" **Nature**, 372, 646-651 (1994).
223. L.J. Smith, A.T. Alexandrescu, M. Pitkeathly, and C.M. Dobson, "Solution structure of a peptide fragment of human alpha-lactalbumin in trifluoroethanol: a model for local structure in the molten globule" **Structure**, 2, 703-712 (1994).
224. L.J. Smith, C. Redfield, R.A. Smith, C.M. Dobson, G.M. Clore, A.M. Gronenborn, M.R. Walter, T.L. Naganbushan, and A. Wlodawer, "Comparison of four independently determined structures of human recombinant interleukin-4" **Nat Struct Biol**, 1, 301-310 (1994).
225. N. Taddei, M. Buck, R.W. Broadhurst, M. Stefani, G. Ramponi, and C.M. Dobson, "Equilibrium unfolding studies of horse muscle acylphosphatase" **Eur J Biochem**, 225, 811-817 (1994).

## 1995

226. J. Balbach, V. Forge, N.A. van Nuland, S.L. Winder, P.J. Hore, and C.M. Dobson, "Following protein folding in real time using NMR spectroscopy" **Nat Struct Biol**, 2, 865-870 (1995).

227. A.R. Brough, C.M. Dobson, I.G. Richardson, and G.W. Groves, "A study of the pozzolanic reaction by solid-state Si-29 nuclear magnetic resonance using selective isotopic enrichment" **J Mater Sci**, 30, 1671-1678 (1995).
228. A.R. Brough, G.W. Groves, I.G. Richardson, S.A. Rodger, and C.M. Dobson, "Kinetics of hydration and other reactions of calcium silicates and cements" in **Applications of NMR Spectroscopy to Cement Science** (ed. P. Colombet and A.-R. Grimmer). Harwood Academic Publishers p. 201-211 (1995).
229. M. Buck, J. Boyd, C. Redfield, D.A. MacKenzie, D.J. Jeenes, D.B. Archer, and C.M. Dobson, "Structural determinants of protein dynamics: analysis of 15N NMR relaxation measurements for main-chain and side-chain nuclei of hen egg white lysozyme" **Biochemistry**, 34, 4041-4055 (1995).
230. M. Buck, H. Schwalbe, and C.M. Dobson, "Characterization of conformational preferences in a partly folded protein by heteronuclear NMR spectroscopy: assignment and secondary structure analysis of hen egg-white lysozyme in trifluoroethanol" **Biochemistry**, 34, 13219-13232 (1995).
231. C.M. Dobson, "Folding and binding – Editorial Overview" **Curr Opin Struct Biol**, 5, 56-57 (1995).
232. C.M. Dobson, "Finding the right fold" **Nat Struct Biol**, 2, 513-517 (1995).
233. C.M. Dobson and A.R. Fersht, "Protein folding - Preface" **Phil Trans R Soc Lond B**, 348, 3-3 (1995).
234. A.J. Edwards, N.J. Burke, C.M. Dobson, K. Prout, and S.J. Heyes, "Solid-state NMR and X-ray-diffraction studies of structure and molecular-motion in Ansa-tritanocenes" **J Am Chem Soc**, 117, 4637-4653 (1995).
235. P. Haezebrouck, M. Joniau, H. Van Dael, S.D. Hooke, N.D. Woodruff, and C.M. Dobson, "An equilibrium partially folded state of human lysozyme at low pH" **J Mol Biol**, 246, 382-387 (1995).
236. S.D. Hooke, S.J. Eyles, A. Miranker, S.E. Radford, C.V. Robinson, and C.M. Dobson, "Cooperative elements in protein folding monitored by electrospray ionization mass spectrometry" **J Am Chem Soc**, 117, 7548-7549 (1995).
237. M. Kotik, S.E. Radford, and C.M. Dobson, "Comparison of the refolding of hen lysozyme from dimethyl sulfoxide and guanidinium chloride" **Biochemistry**, 34, 1714-1724 (1995).
238. B.B. Kragelund, C.V. Robinson, J. Knudsen, C.M. Dobson, and F.M. Poulsen, "Folding of a four-helix bundle: studies of acyl-coenzyme A binding protein" **Biochemistry**, 34, 7217-7224 (1995).
239. L.A. Morozova, D.T. Haynie, C. Arico-Muendel, H. Van Dael, and C.M. Dobson, "Structural basis of the stability of a lysozyme molten globule" **Nat Struct Biol**, 2, 871-875 (1995).
240. E. Pardon, P. Haezebrouck, A. De Baetselier, S.D. Hooke, K.T. Fancourt, J. Desmet, C.M. Dobson, H. Van Dael, and M. Joniau, "A Ca(2+)-binding chimera of human lysozyme and bovine alpha-lactalbumin that can form a molten globule" **J Biol Chem**, 270, 10514-10524 (1995).

241. S.E. Radford and C.M. Dobson, "Insights into protein folding using physical techniques: studies of lysozyme and alpha-lactalbumin" **Phil Trans R Soc Lond B**, 348, 17-25 (1995).
242. B.A. Schulman, C. Redfield, Z.Y. Peng, C.M. Dobson, and P.S. Kim, "Different subdomains are most protected from hydrogen exchange in the molten globule and native states of human alpha-lactalbumin" **J Mol Biol**, 253, 651-657 (1995).
243. L.J. Smith and C.M. Dobson, "Protein structures in solution viewed by NMR" in **Making the Most of Your Model** (ed. W.N. Hunter, J.M. Thornton, and S. Bailey). CCL Daresbury. Daresbury, p. 53-62 (1995).
244. L.J. Smith, A.E. Mark, C.M. Dobson, and W.F. van Gunsteren, "Comparison of MD simulations and NMR experiments for hen lysozyme. Analysis of local fluctuations, cooperative motions, and global changes" **Biochemistry**, 34, 10918-10931 (1995).
245. G. Spraggon, C. Phillips, U.K. Nowak, C.P. Ponting, D. Saunders, C.M. Dobson, D.I. Stuart, and E.Y. Jones, "The crystal structure of the catalytic domain of human urokinase-type plasminogen activator" **Structure**, 3, 681-691 (1995).
246. J.J. Yang, M. Buck, M. Pitkeathly, M. Kotik, D.T. Haynie, C.M. Dobson, and S.E. Radford, "Conformational properties of four peptides spanning the sequence of hen lysozyme" **J Mol Biol**, 252, 483-491 (1995).

#### 1996

247. Protein Folding (ed. C.M. Dobson and A.R. Fersht). **Cambridge University Press** p. 119 (1996).
248. J. Balbach, V. Forge, W.S. Lau, N.A. van Nuland, K. Brew, and C.M. Dobson, "Protein folding monitored at individual residues during a two-dimensional NMR experiment" **Science**, 274, 1161-1163 (1996).
249. K.A. Bolin, M. Pitkeathly, A. Miranker, L.J. Smith, and C.M. Dobson, "Insight into a random coil conformation and an isolated helix: structural and dynamical characterisation of the C-helix peptide from hen lysozyme" **J Mol Biol**, 261, 443-453 (1996).
250. A.R. Brough, C.M. Dobson, I.G. Richardson, and G.W. Groves, "Alkali activation of reactive silicas in cements: In situ Si-29 MAS NMR studies of the kinetics of silicate polymerization" **J Mater Sci**, 31, 3365-3373 (1996).
251. M. Buck, H. Schwalbe, and C.M. Dobson, "Main-chain dynamics of a partially folded protein: 15N NMR relaxation measurements of hen egg white lysozyme denatured in trifluoroethanol" **J Mol Biol**, 57, 669-683 (1996).
252. F. Conejero-Lara, J. Parrado, A.I. Azuaga, R.A. Smith, C.P. Ponting, and C.M. Dobson, "Thermal stability of the three domains of streptokinase studied by circular dichroism and nuclear magnetic resonance" **Protein Sci**, 5, 2583-2591 (1996).
253. K.M. Fiebig, H. Schwalbe, M. Buck, L.J. Smith, and C.M. Dobson, "Toward a description of the conformations of denatured states of proteins. Comparison of a

- random coil model with NMR measurements" **J Phys Chem**, 100, 2661-2666 (1996).
254. A. Miranker, G.H. Kruppa, C.V. Robinson, R.T. Aplin, and C.M. Dobson, "Isotope-labeling strategy for the assignment of protein fragments generated for mass spectrometry" **J Am Chem Soc**, 118, 7402-7403 (1996).
  255. A. Miranker, C.V. Robinson, S.E. Radford, and C.M. Dobson, "Investigation of protein folding by mass spectrometry" **FASEB J**, 10, 93-101 (1996).
  256. A.D. Miranker and C.M. Dobson, "Collapse and cooperativity in protein folding" **Curr Opin Struct Biol**, 6, 31-42 (1996).
  257. J. Parrado, F. Conejero-Lara, R.A. Smith, J.M. Marshall, C.P. Ponting, and C.M. Dobson, "The domain organization of streptokinase: nuclear magnetic resonance, circular dichroism, and functional characterization of proteolytic fragments" **Protein Sci**, 5, 693-704 (1996).
  258. J. Parrado, P.R. Escuredo, F. Conejero-Lara, M. Kotik, C.P. Ponting, J.A. Asenjo, and C.M. Dobson, "Molecular characterisation of a thermoactive beta-1,3-glucanase from *Oerskovia xanthineolytica*" **Biochim Biophys Acta**, 1296, 145-151 (1996).
  259. K.W. Plaxco and C.M. Dobson, "Time-resolved biophysical methods in the study of protein folding" **Curr Opin Struct Biol**, 6, 630-636 (1996).
  260. K.W. Plaxco, C. Spitzfaden, I.D. Campbell, and C.M. Dobson, "Rapid refolding of a proline-rich all-beta-sheet fibronectin type III module" **Proc Natl Acad Sci USA**, 93, 10703-10706 (1996).
  261. C.V. Robinson, E.W. Chung, B.B. Kragelund, J. Knudsen, R.T. Aplin, F.M. Poulsen, and C.M. Dobson, "Probing the nature of noncovalent interactions by mass spectrometry. A study of protein-CoA ligand binding and assembly" **J Am Chem Soc**, 118, 8646-8653 (1996).
  262. L.J. Smith, K.A. Bolin, H. Schwalbe, M.W. MacArthur, J.M. Thornton, and C.M. Dobson, "Analysis of main chain torsion angles in proteins: prediction of NMR coupling constants for native and random coil conformations" **J Mol Biol**, 255, 494-506 (1996).
  263. L.J. Smith and C.M. Dobson, "NMR and protein dynamics" **Int J Quantum Chem**, 59, 315-332 (1996).
  264. L.J. Smith and C.M. Dobson, "Insights into Protein Dynamics using NMR Techniques", in *Dynamics and the Problem of Recognition in Biological Macromolecules* (ed. O. Jardetzky and J.F. Lefèvre). Plenum Press. New York, p. 127-138 (1996).
  265. L.J. Smith, K.M. Fiebig, H. Schwalbe, and C.M. Dobson, "The concept of a random coil. Residual structure in peptides and denatured proteins" **Fold Des**, 1, R95-106 (1996).
  266. J.J. Yang, B. van den Berg, M. Pitkeathly, L.J. Smith, K.A. Bolin, T.A. Keiderling, C. Redfield, C.M. Dobson, and S.E. Radford, "Native-like secondary structure in a peptide from the alpha-domain of hen lysozyme" **Fold Des**, 1, 473-484 (1996).

## 1997

267. J. Balbach, V. Forge, W.S. Lau, J.A. Jones, N.A. van Nuland, and C.M. Dobson, "Detection of residue contacts in a protein folding intermediate" **Proc Natl Acad Sci USA**, 94, 7182-7185 (1997).
268. D.R. Booth, M. Sunde, V. Bellotti, C.V. Robinson, W.L. Hutchinson, P.E. Fraser, P.N. Hawkins, C.M. Dobson, S.E. Radford, C.C. Blake, and M.B. Pepys, "Instability, unfolding and aggregation of human lysozyme variants underlying amyloid fibrillogenesis" **Nature**, 385, 787-793 (1997).
269. E.W. Chung, E.J. Nettleton, C.J. Morgan, M. Gross, A. Miranker, S.E. Radford, C.M. Dobson, and C.V. Robinson, "Hydrogen exchange properties of proteins in native and denatured states monitored by mass spectrometry and NMR" **Protein Sci**, 6, 1316-1324 (1997).
270. C.M. Dobson, "The structural basis of protein folding" **Protein Eng**, 10, 19-19 (1997).
271. C.M. Dobson, "The role of NMR spectroscopy in understanding how proteins fold" in **Biological NMR Spectroscopy** (ed. J.L. Markley and S.J. Opella). Oxford University Press. New York, p. 82-93 (1997).
272. P.J. Hore, S.L. Winder, C.H. Roberts, and C.M. Dobson, "Stopped-flow photo-CIDNP observation of protein folding" **J Am Chem Soc**, 119, 5049-5050 (1997).
273. J.A. Hubbard, D.P. Raleigh, J.R. Bonnerjea, and C.M. Dobson, "Identification of the epitopes of calcitonin gene-related peptide (CGRP) for two anti-CGRP monoclonal antibodies by 2D NMR" **Protein Sci**, 6, 1945-1952 (1997).
274. J.A. Jones, D.K. Wilkins, L.J. Smith, and C.M. Dobson, "Characterisation of protein unfolding by NMR diffusion measurements" **J Biomol NMR**, 10, 199-203 (1997).
275. H. Lu, M. Buck, S.E. Radford, and C.M. Dobson, "Acceleration of the folding of hen lysozyme by trifluoroethanol" **J Mol Biol**, 265, 112-117 (1997).
276. A. Matagne, S.E. Radford, and C.M. Dobson, "Fast and slow tracks in lysozyme folding: insight into the role of domains in the folding process" **J Mol Biol**, 267, 1068-1074 (1997).
277. L.A. Morozova-Roche, C.C. Arico-Muendel, D.T. Haynie, V.I. Emelyanenko, H. Van Dael, and C.M. Dobson, "Structural characterisation and comparison of the native and A-states of equine lysozyme" **J Mol Biol**, 268, 903-921 (1997).
278. C.J. Penkett, C. Redfield, I. Dodd, J. Hubbard, D.L. McBay, D.E. Mossakowska, R.A. Smith, C.M. Dobson, and L.J. Smith, "NMR analysis of main-chain conformational preferences in an unfolded fibronectin-binding protein" **J Mol Biol**, 274, 152-159 (1997).
279. K.W. Plaxco, C.J. Morton, S.B. Grimshaw, J.A. Jones, M. Pitkeathly, I.D. Campbell, and C.M. Dobson, "The effects of guanidine hydrochloride on the 'random coil' conformations and NMR chemical shifts of the peptide series GGXGG" **J Biomol NMR**, 10, 221-230 (1997).

280. K.W. Plaxco, C. Spitzfaden, I.D. Campbell, and C.M. Dobson, "A comparison of the folding kinetics and thermodynamics of two homologous fibronectin type III modules" **J Mol Biol**, 270, 763-770 (1997).
281. B.A. Schulman, P.S. Kim, C.M. Dobson, and C. Redfield, "A residue-specific NMR view of the non-cooperative unfolding of a molten globule" **Nat Struct Biol**, 4, 630-634 (1997).
282. H. Schwalbe, K.M. Fiebig, M. Buck, J.A. Jones, S.B. Grimshaw, A. Spencer, S.J. Glaser, L.J. Smith, and C.M. Dobson, "Structural and dynamical properties of a denatured protein. Heteronuclear 3D NMR experiments and theoretical simulations of lysozyme in 8 M urea" **Biochemistry**, 36, 8977-8991 (1997).
283. M. Wendeler, J. Fattah, J.M. Twyman, A.J. Edwards, C.M. Dobson, S.J. Heyes, and K. Prout, "Combination of CP/MAS NMR spectroscopy and X-ray crystallography: Structure and dynamics in molecular crystals of hydrogen, lithium, sodium, rubidium, and cesium penicillin V" **J Am Chem Soc**, 119, 9793-9803 (1997).

#### 1998

284. D.R. Benjamin, C.V. Robinson, J.P. Hendrick, F.U. Hartl, and C.M. Dobson, "Mass spectrometry of ribosomes and ribosomal subunits" **Proc Natl Acad Sci USA**, 95, 7391-7395 (1998).
285. A.R. Brough, C.M. Dobson, I.G. Richardson, and G.W. Groves, "<sup>29</sup>Si Isotopic enrichment and selective enrichment for study by NMR of the hydration of model cements and blended cements" in **NMR Spectroscopy of Cement Based Materials** (ed. P. Colombet). Springer Verlag p. 269-275 (1998).
286. A.R. Brough, I.G. Richardson, G.W. Groves, and C.M. Dobson, "Alkali activation of reactive silicas in cements: In situ <sup>29</sup>Si MAS NMR studies of the kinetics of silicate polymerization" in **NMR Spectroscopy of Cement Based Materials** (ed. P. Colombet). Springer Verlag p. 277-286 (1998).
287. F. Chiti, F. Magherini, N. Taddei, C. Ilardi, M. Stefani, M. Bucciantini, C.M. Dobson, and G. Ramponi, "Studies on enzymatic activity and conformational stability of muscle acylphosphatase mutated at conserved lysine residues" **Protein Eng**, 11, 557-561 (1998).
288. F. Chiti, N. Taddei, N.A. van Nuland, F. Magherini, M. Stefani, G. Ramponi, and C.M. Dobson, "Structural characterization of the transition state for folding of muscle acylphosphatase" **J Mol Biol**, 283, 893-903 (1998).
289. F. Chiti, N.A. van Nuland, N. Taddei, F. Magherini, M. Stefani, G. Ramponi, and C.M. Dobson, "Conformational stability of muscle acylphosphatase: the role of temperature, denaturant concentration, and pH" **Biochemistry**, 37, 1447-1455 (1998).
290. F. Conejero-Lara, J. Parrado, A.I. Azuaga, C.M. Dobson, and C.P. Ponting, "Analysis of the interactions between streptokinase domains and human plasminogen" **Protein Sci**, 7, 2190-2199 (1998).

291. H.H. de Jongh, S. Rospert, and C.M. Dobson, "Comparison of the conformational state and in vitro refolding of yeast chaperonin protein cpn10 with bacterial GroES" **Biochem Biophys Res Commun**, 244, 884-888 (1998).
292. C.M. Dobson and R.J. Ellis, "Protein folding and misfolding inside and outside the cell" **EMBO J**, 17, 5251-5254 (1998).
293. C.M. Dobson and P.J. Hore, "Kinetic studies of protein folding using NMR spectroscopy" **Nat Struct Biol**, 5 Suppl, 504-507 (1998).
294. C.M. Dobson, A. Sali, and M. Karplus, "Protein folding: A perspective from theory and experiment" **Angew Chem Int Ed Engl**, 37, 868-893 (1998).
295. J.I. Guijarro, C.J. Morton, K.W. Plaxco, I.D. Campbell, and C.M. Dobson, "Folding kinetics of the SH3 domain of PI3 kinase by real-time NMR combined with optical spectroscopy" **J Mol Biol**, 276, 657-667 (1998).
296. J.I. Guijarro, M. Sunde, J.A. Jones, I.D. Campbell, and C.M. Dobson, "Amyloid fibril formation by an SH3 domain" **Proc Natl Acad Sci USA**, 95, 4224-4228 (1998).
297. A. Matagne, E.W. Chung, L.J. Ball, S.E. Radford, C.V. Robinson, and C.M. Dobson, "The origin of the alpha-domain intermediate in the folding of hen lysozyme" **J Mol Biol**, 277, 997-1005 (1998).
298. A. Matagne and C.M. Dobson, "The folding process of hen lysozyme: a perspective from the 'new view'" **Cell Mol Life Sci**, 54, 363-371 (1998).
299. C.J. Morgan, A. Miranker, and C.M. Dobson, "Characterization of collapsed states in the early stages of the refolding of hen lysozyme" **Biochemistry**, 37, 8473-8480 (1998).
300. E.J. Nettleton, M. Sunde, Z. Lai, J.W. Kelly, C.M. Dobson, and C.V. Robinson, "Protein subunit interactions and structural integrity of amyloidogenic transthyretins: evidence from electrospray mass spectrometry" **J Mol Biol**, 281, 553-564 (1998).
301. C.J. Penkett, C. Redfield, J.A. Jones, I. Dodd, J. Hubbard, R.A. Smith, L.J. Smith, and C.M. Dobson, "Structural and dynamical characterization of a biologically active unfolded fibronectin-binding protein from *Staphylococcus aureus*" **Biochemistry**, 37, 17054-17067 (1998).
302. K.W. Plaxco and C.M. Dobson, "Monitoring protein folding using time-resolved biophysical techniques" in **Protein Dynamics, Function and Design** (ed. J.F. Lefevre and O. Jardetzky). Plenum Publishing Corporation. New York, p. 163-172 (1998).
303. K.W. Plaxco, J.I. Guijarro, C.J. Morton, M. Pitkeathly, I.D. Campbell, and C.M. Dobson, "The folding kinetics and thermodynamics of the Fyn-SH3 domain" **Biochemistry**, 37, 2529-2537 (1998).
304. A.A. Rostom, M. Sunde, S.J. Richardson, G. Schreiber, S. Jarvis, R. Bateman, C.M. Dobson, and C.V. Robinson, "Dissection of multi-protein complexes using mass spectrometry: subunit interactions in transthyretin and retinol-binding protein complexes" **Proteins**, Suppl 2, 3-11 (1998).



305. L.J. Smith, A.E. Mark, C.M. Dobson, and W.F. van Gunsteren, "Molecular dynamics simulations of peptide fragments from hen lysozyme: insight into non-native protein conformations" **J Mol Biol**, 280, 703-719 (1998).
306. N.A. van Nuland, F. Chiti, N. Taddei, G. Raugei, G. Ramponi, and C.M. Dobson, "Slow folding of muscle acylphosphatase in the absence of intermediates" **J Mol Biol**, 283, 883-891 (1998).
307. N.A. Van Nuland, W. Meijberg, J. Warner, V. Forge, R.M. Scheek, G.T. Robillard, and C.M. Dobson, "Slow cooperative folding of a small globular protein HPr" **Biochemistry**, 37, 622-637 (1998).
308. N.A.J. Van Nuland, V. Forge, J. Balbach, and C.M. Dobson, "Real-time NMR studies of protein folding" **Acc Chem Res**, 31, 773-780 (1998).
309. H. Vis, U. Heinemann, C.M. Dobson, and C.V. Robinson, "Detection of a monomeric intermediate associated with dimerization of protein HU by mass spectrometry" **J Am Chem Soc**, 120, 6427-6428 (1998).

#### 1999

310. A.I. Azuaga, N.D. Woodruff, F. Conejero-Lara, V.F. Cox, R.A. Smith, and C.M. Dobson, "Expression and characterization of the intact N-terminal domain of streptokinase" **Protein Sci**, 8, 443-446 (1999).
311. J. Boyd, C.M. Dobson, A.S. Morar, R.J.P. Williams, and G.J. Pielak, "H-1 and N-15 hyperfine shifts of cytochrome c" **J Am Chem Soc**, 121, 9247-9248 (1999).
312. D. Canet, M. Sunde, A.M. Last, A. Miranker, A. Spencer, C.V. Robinson, and C.M. Dobson, "Mechanistic studies of the folding of human lysozyme and the origin of amyloidogenic behavior in its disease-related variants" **Biochemistry**, 38, 6419-6427 (1999).
313. F. Chiti, N. Taddei, E. Giannoni, N.A. van Nuland, G. Ramponi, and C.M. Dobson, "Development of enzymatic activity during protein folding. Detection of a spectroscopically silent native-like intermediate of muscle acylphosphatase" **J Biol Chem**, 274, 20151-20158 (1999).
314. F. Chiti, N. Taddei, P. Webster, D. Hamada, T. Fiaschi, G. Ramponi, and C.M. Dobson, "Acceleration of the folding of acylphosphatase by stabilization of local secondary structure" **Nat Struct Biol**, 6, 380-387 (1999).
315. F. Chiti, N. Taddei, P.M. White, M. Bucciantini, F. Magherini, M. Stefani, and C.M. Dobson, "Mutational analysis of acylphosphatase suggests the importance of topology and contact order in protein folding" **Nat Struct Biol**, 6, 1005-1009 (1999).
316. F. Chiti, P. Webster, N. Taddei, A. Clark, M. Stefani, G. Ramponi, and C.M. Dobson, "Designing conditions for in vitro formation of amyloid protofilaments and fibrils" **Proc Natl Acad Sci USA**, 96, 3590-3594 (1999).
317. C.M. Dobson, "Protein misfolding, evolution and disease" **Trends Biochem Sci**, 24, 329-332 (1999).

318. C.M. Dobson, "How do we explore the energy landscape for folding?" in **Simplicity and Complexity in Proteins and Nucleic Acids** (ed. H. Fraunfelder, J. Deisenhofer, and P.G. Wolynes). Dahlem University Press. Berlin, p. 15-37 (1999).
319. C.M. Dobson, "Protein folding, misfolding and disease", **Ecole Physique et Chimie du Vivant** **1**. p. 77-82 (1999).
320. C.M. Dobson and R.J. Ellis, "Oleg Ptitsyn (1929-99)" **Nature**, 400, 122 (1999).
321. C.M. Dobson and M. Karplus, "The fundamentals of protein folding: bringing together theory and experiment" **Curr Opin Struct Biol**, 9, 92-101 (1999).
322. C.M. Dobson and O.B. Ptitsyn, "Folding and binding. The biological consequences of physical principles. Editorial Overview" **Curr Opin Struct Biol**, 9, 89-91 (1999).
323. M. Fändrich, G. Zandomenighi, M.R.H. Krebs, M. Kittler, K. Buder, A. Roßner, S.H. Heinemann, C.M. Dobson and S. Diekmann. "Apomyoglobin reveals a random-nucleation mechanism in amyloid protofibril formation" **Acta Histochem**, 108, 215-219 (1999).
324. V. Forge, R.T. Wijesinha, J. Balbach, K. Brew, C.V. Robinson, C. Redfield, and C.M. Dobson, "Rapid collapse and slow structural reorganisation during the refolding of bovine alpha-lactalbumin" **J Mol Biol**, 288, 673-688 (1999).
325. M. Gross, D.K. Wilkins, M.C. Pitkeathly, E.W. Chung, C. Higham, A. Clark, and C.M. Dobson, "Formation of amyloid fibrils by peptides derived from the bacterial cold shock protein CspB" **Protein Sci**, 8, 1350-1357 (1999).
326. M. Hennig, W. Bermel, A. Spencer, C.M. Dobson, L.J. Smith, and H. Schwalbe, "Side-chain conformations in an unfolded protein: chi1 distributions in denatured hen lysozyme determined by heteronuclear <sup>13</sup>C, <sup>15</sup>N NMR spectroscopy" **J Mol Biol**, 288, 705-723 (1999).
327. J.L. Jiménez, J.I. Guijarro, E. Orlova, J. Zurdo, C.M. Dobson, M. Sunde, and H.R. Saibil, "Cryo-electron microscopy structure of an SH3 amyloid fibril and model of the molecular packing" **EMBO J**, 18, 815-821 (1999).
328. M.R. Leroux, M. Fändrich, D. Klunker, K. Siegers, A.N. Lupas, J.R. Brown, E. Schiebel, C.M. Dobson, and F.U. Hartl, "MtGimC, a novel archaeal chaperone related to the eukaryotic chaperonin cofactor GimC/prefoldin" **EMBO J**, 18, 6730-6743 (1999).
329. C.E. Lyon, J.A. Jones, C. Redfield, C.M. Dobson, and P.J. Hore, "Two-dimensional N-15-H-1 photo-CIDNP as a surface probe of native and partially structured proteins" **J Am Chem Soc**, 121, 6505-6506 (1999).
330. L.A. Morozova-Roche, J.A. Jones, W. Noppe, and C.M. Dobson, "Independent nucleation and heterogeneous assembly of structure during folding of equine lysozyme" **J Mol Biol**, 289, 1055-1073 (1999).
331. O.B. Ptitsyn, A.V. Finkelstein, and C.M. Dobson, "Protein folding: A bridge between physics and biology" **Mol Biol**, 33, 893-896 (1999).

332. S.E. Radford and C.M. Dobson, "From computer simulations to human disease: emerging themes in protein folding" **Cell**, 97, 291-298 (1999).
333. C. Redfield, B.A. Schulman, M.A. Milhollen, P.S. Kim, and C.M. Dobson, "alpha-lactalbumin forms a compact molten globule in the absence of disulfide bonds" **Nat Struct Biol**, 6, 948-952 (1999).
334. L.J. Smith, C.M. Dobson, and W.F. van Gunsteren, "Side-chain conformational disorder in a molten globule: molecular dynamics simulations of the A-state of human alpha-lactalbumin" **J Mol Biol**, 286, 1567-1580 (1999).
335. L.J. Smith, C.M. Dobson, and W.F. van Gunsteren, "Molecular dynamics simulations of human alpha-lactalbumin: changes to the structural and dynamical properties of the protein at low pH" **Proteins**, 36, 77-86 (1999).
336. A. Spencer, L.A. Morozov-Roche, W. Noppe, D.A. MacKenzie, D.J. Jeenes, M. Joniau, C.M. Dobson, and D.B. Archer, "Expression, purification, and characterization of the recombinant calcium-binding equine lysozyme secreted by the filamentous fungus *Aspergillus niger*: comparisons with the production of hen and human lysozymes" **Protein Expr Purif**, 16, 171-180 (1999).
337. N. Taddei, F. Chiti, P. Paoli, T. Fiaschi, M. Bucciantini, M. Stefani, C.M. Dobson, and G. Ramponi, "Thermodynamics and kinetics of folding of common-type acylphosphatase: comparison to the highly homologous muscle isoenzyme" **Biochemistry**, 38, 2135-2142 (1999).
338. B. van den Berg, E.W. Chung, C.V. Robinson, and C.M. Dobson, "Characterisation of the dominant oxidative folding intermediate of hen lysozyme" **J Mol Biol**, 290, 781-796 (1999).
339. B. van den Berg, E.W. Chung, C.V. Robinson, P.L. Mateo, and C.M. Dobson, "The oxidative refolding of hen lysozyme and its catalysis by protein disulfide isomerase" **EMBO J**, 18, 4794-4803 (1999).
340. B. van den Berg, R.J. Ellis, and C.M. Dobson, "Effects of macromolecular crowding on protein folding and aggregation" **EMBO J**, 18, 6927-6933 (1999).
341. H. Vis, C.M. Dobson, and C.V. Robinson, "Selective association of protein molecules followed by mass spectrometry" **Protein Sci**, 8, 1368-1370 (1999).
342. D.K. Wilkins, S.B. Grimshaw, V. Receveur, C.M. Dobson, J.A. Jones, and L.J. Smith, "Hydrodynamic radii of native and denatured proteins measured by pulse field gradient NMR techniques" **Biochemistry**, 38, 16424-16431 (1999).

## 2000

343. M. Bouchard, D.R. Benjamin, P. Tito, C.V. Robinson, and C.M. Dobson, "Solvent effects on the conformation of the transmembrane peptide gramicidin A: insights from electrospray ionization mass spectrometry" **Biophys J**, 78, 1010-1017 (2000).
344. M. Bouchard, J. Zurdo, E.J. Nettleton, C.M. Dobson, and C.V. Robinson, "Formation of insulin amyloid fibrils followed by FTIR simultaneously with CD and electron microscopy" **Protein Sci**, 9, 1960-1967 (2000).

345. A.K. Chamberlain, C.E. MacPhee, J. Zurdo, L.A. Morozova-Roche, H.A. Hill, C.M. Dobson, and J.J. Davis, "Ultrastructural organization of amyloid fibrils by atomic force microscopy" **Biophys J**, 79, 3282-3293 (2000).
346. F. Chiti, N. Taddei, M. Bucciantini, P. White, G. Ramponi, and C.M. Dobson, "Mutational analysis of the propensity for amyloid formation by a globular protein" **EMBO J**, 19, 1441-1449 (2000).
347. A.R. Dinner, A. Sali, L.J. Smith, C.M. Dobson, and M. Karplus, "Understanding protein folding via free energy surfaces from theory and experiment" **Trends Biochem Sci**, 25, 331-339 (2000).
348. C.M. Dobson, "The Nature and Significance of Protein Folding" in **Mechanisms of Protein Folding** (ed. R.H. Pain). Oxford University Press, USA p. 1-33 (2000).
349. C.M. Dobson, G.B. Ellison, A.F. Tuck, and V. Vaida, "Atmospheric aerosols as prebiotic chemical reactors" **Proc Natl Acad Sci USA**, 97, 11864-11868 (2000).
350. M. Fändrich, M.A. Tito, M.R. Leroux, A.A. Rostom, F.U. Hartl, C.M. Dobson, and C.V. Robinson, "Observation of the noncovalent assembly and disassembly pathways of the chaperone complex MtGimC by mass spectrometry" **Proc Natl Acad Sci USA**, 97, 14151-14155 (2000).
351. D. Hamada, F. Chiti, J.I. Gujjarro, M. Kataoka, N. Taddei, and C.M. Dobson, "Evidence concerning rate-limiting steps in protein folding from the effects of trifluoroethanol" **Nat Struct Biol**, 7, 58-61 (2000).
352. T. Konno, Y.O. Kamatari, N. Tanaka, H. Kamikubo, C.M. Dobson, and K. Nagayama, "A partially unfolded structure of the alkaline-denatured state of pepsin and its implication for stability of the zymogen-derived protein" **Biochemistry**, 39, 4182-4190 (2000).
353. M.R. Krebs, D.K. Wilkins, E.W. Chung, M.C. Pitkeathly, A.K. Chamberlain, J. Zurdo, C.V. Robinson, and C.M. Dobson, "Formation and seeding of amyloid fibrils from wild-type hen lysozyme and a peptide fragment from the beta-domain" **J Mol Biol**, 300, 541-549 (2000).
354. C.E. MacPhee and C.M. Dobson, "Chemical dissection and reassembly of amyloid fibrils formed by a peptide fragment of transthyretin" **J Mol Biol**, 297, 1203-1215 (2000).
355. C.E. MacPhee and C.M. Dobson, "Formation of mixed fibrils demonstrates the generic nature and potential utility of amyloid nanostructures" **J Am Chem Soc**, 122, 12707-12713 (2000).
356. K. Maeda, C.E. Lyon, J.J. Lopez, M. Cemazar, C.M. Dobson, and P.J. Hore, "Improved photo-CIDNP methods for studying protein structure and folding" **J Biomol NMR**, 16, 235-244 (2000).
357. A. Matagne, M. Jamin, E.W. Chung, C.V. Robinson, S.E. Radford, and C.M. Dobson, "Thermal unfolding of an intermediate is associated with non-Arrhenius kinetics in the folding of hen lysozyme" **J Mol Biol**, 297, 193-210 (2000).

358. C.J. Morgan, D.K. Wilkins, L.J. Smith, Y. Kawata, and C.M. Dobson, "A compact monomeric intermediate identified by NMR in the denaturation of dimeric triose phosphate isomerase" **J Mol Biol**, 300, 11-16 (2000).
359. L.A. Morozova-Roche, J. Zurdo, A. Spencer, W. Noppe, V. Receveur, D.B. Archer, M. Joniau, and C.M. Dobson, "Amyloid fibril formation and seeding by wild-type human lysozyme and its disease related mutational variants" **J Struct Biol**, 130, 339-351 (2000).
360. E.J. Nettleton, P. Tito, M. Sunde, M. Bouchard, C.M. Dobson, and C.V. Robinson, "Characterization of the oligomeric states of insulin in self-assembly and amyloid fibril formation by mass spectrometry" **Biophys J**, 79, 1053-1065 (2000).
361. C.J. Penkett, C.M. Dobson, L.J. Smith, J.R. Bright, A.R. Pickford, I.D. Campbell, and J.R. Potts, "Identification of residues involved in the interaction of Staphylococcus aureus fibronectin-binding protein with the (4)F1(5)F1 module pair of human fibronectin using heteronuclear NMR spectroscopy" **Biochemistry**, 39, 2887-2893 (2000).
362. T.A. Pertinhez, D. Hamada, L.J. Smith, F. Chiti, N. Taddei, M. Stefani, and C.M. Dobson, "Initial denaturing conditions influence the slow folding phase of acylphosphatase associated with proline isomerization" **Protein Sci**, 9, 1466-1473 (2000).
363. K. Prout, S.J. Heyes, C.M. Dobson, A. McDaid, T. Maris, M. Muller, and M.J. Seaman, "Variable-temperature studies of order/disorder transitions in the thiourea pyridinium halide crystals by XRD and solid-state H-2 NMR" **Chem Mater**, 12, 3561-3569 (2000).
364. A.A. Rostom, P. Fucini, D.R. Benjamin, R. Juenemann, K.H. Nierhaus, F.U. Hartl, C.M. Dobson, and C.V. Robinson, "Detection and selective dissociation of intact ribosomes in a mass spectrometer" **Proc Natl Acad Sci USA**, 97, 5185-5190 (2000).
365. N. Taddei, F. Chiti, T. Fiaschi, M. Bucciattini, C. Capanni, M. Stefani, L. Serrano, C.M. Dobson, and G. Ramponi, "Stabilisation of alpha-helices by site-directed mutagenesis reveals the importance of secondary structure in the transition state for acylphosphatase folding" **J Mol Biol**, 300, 633-647 (2000).
366. B. van den Berg, R. Wain, C.M. Dobson, and R.J. Ellis, "Macromolecular crowding perturbs protein refolding kinetics: implications for folding inside the cell" **EMBO J**, 19, 3870-3875 (2000).
367. V. Villegas, J. Zurdo, V.V. Filimonov, F.X. Avilés, C.M. Dobson, and L. Serrano, "Protein engineering as a strategy to avoid formation of amyloid fibrils" **Protein Sci**, 9, 1700-1708 (2000).
368. D.K. Wilkins, C.M. Dobson, and M. Gross, "Biophysical studies of the development of amyloid fibrils from a peptide fragment of cold shock protein B" **Eur J Biochem**, 267, 2609-2616 (2000).

## 2001

369. D. Canet, K. Doering, C.M. Dobson, and Y. Dupont, "High-sensitivity fluorescence anisotropy detection of protein-folding events: application to alpha-lactalbumin" **Biophys J**, 80, 1996-2003 (2001).
370. A.K. Chamberlain, V. Receveur, A. Spencer, C. Redfield, and C.M. Dobson, "Characterization of the structure and dynamics of amyloidogenic variants of human lysozyme by NMR spectroscopy" **Protein Sci**, 10, 2525-2530 (2001).
371. F. Chiti, M. Bucciantini, C. Capanni, N. Taddei, C.M. Dobson, and M. Stefani, "Solution conditions can promote formation of either amyloid protofilaments or mature fibrils from the HypF N-terminal domain" **Protein Sci**, 10, 2541-2547 (2001).
372. F. Chiti, E. De Lorenzi, S. Grossi, P. Mangione, S. Giorgetti, G. Caccialanza, C.M. Dobson, G. Merlini, G. Ramponi, and V. Bellotti, "A partially structured species of beta(2)-microglobulin is significantly populated under physiological conditions and involved in fibrillogenesis" **J Biol Chem**, 276, 46714-46721 (2001).
373. F. Chiti, P. Mangione, A. Andreola, S. Giorgetti, M. Stefani, C.M. Dobson, V. Bellotti, and N. Taddei, "Detection of two partially structured species in the folding process of the amyloidogenic protein beta 2-microglobulin" **J Mol Biol**, 307, 379-391 (2001).
374. F. Chiti, N. Taddei, M. Stefani, C.M. Dobson, and G. Ramponi, "Reduction of the amyloidogenicity of a protein by specific binding of ligands to the native conformation" **Protein Sci**, 10, 879-886 (2001).
375. J. Clarke and C.M. Dobson, "Folding and binding emerging themes in protein folding and assembly" **Curr Opin Struct Biol**, 11, 67-69 (2001).
376. C.M. Dobson, "The structural basis of protein folding and its links with human disease" **Phil Trans R Soc Lond B**, 356, 133-145 (2001).
377. C.M. Dobson, "The mechanism of amyloid formation and its links to human disease and biological evolution" in **Self-Assembling Peptide Systems in Biology, Medicine and Engineering** (ed. A. Aggeli, N. Boden, and S. Zhang). Kluwer Academic Pub. The Netherlands, p. 65-74 (2001).
378. C.M. Dobson, "Protein folding and its links with human disease" in **From Protein Folding to New Enzymes** (ed. A. Berry and S.E. Radford). Portland Press, London (on behalf of the Biochemical Society) p. 1-26 (2001).
379. C.M. Dobson, R.J. Ellis, and A.R. Fersht, "Protein misfolding and disease - Preface" **Phil Trans R Soc Lond B**, 356, 129-131 (2001).
380. C.M. Dobson, J.A. Gerrard, and A.J. Pratt, **Foundations of Chemical Biology**. Oxford University Press, Oxford, (2001).
381. M. Fandrich, M.A. Fletcher, and C.M. Dobson, "Amyloid fibrils from muscle myoglobin" **Nature**, 410, 165-166 (2001).
382. Y.O. Kamatari, H. Yamada, K. Akasaka, J.A. Jones, C.M. Dobson, and L.J. Smith, "Response of native and denatured hen lysozyme to high pressure

- studied by (15)N/(1)H NMR spectroscopy" **Eur J Biochem**, 268, 1782-1793 (2001).
383. C.E. MacPhee, C.M. Dobson, and J.D. Wade, "The formation of amyloid fibrils by relaxin" **RELAXIN 2000**, 399-404 (2001).
384. E. Paci, L.J. Smith, C.M. Dobson, and M. Karplus, "Exploration of partially unfolded states of human alpha-lactalbumin by molecular dynamics simulation" **J Mol Biol**, 306, 329-347 (2001).
385. T.A. Pertinhez, M. Bouchard, E.J. Tomlinson, R. Wain, S.J. Ferguson, C.M. Dobson, and L.J. Smith, "Amyloid fibril formation by a helical cytochrome" **FEBS Lett**, 495, 184-186 (2001).
386. J.S. Reader, N.A. Van Nuland, G.S. Thompson, S.J. Ferguson, C.M. Dobson, and S.E. Radford, "A partially folded intermediate species of the beta-sheet protein apo-pseudoazurin is trapped during proline-limited folding" **Protein Sci**, 10, 1216-1224 (2001).
387. H. Schwalbe, S.B. Grimshaw, A. Spencer, M. Buck, J. Boyd, C.M. Dobson, C. Redfield, and L.J. Smith, "A refined solution structure of hen lysozyme determined using residual dipolar coupling data" **Protein Sci**, 10, 677-688 (2001).
388. N. Taddei, C. Capanni, F. Chiti, M. Stefani, C.M. Dobson, and G. Ramponi, "Folding and aggregation are selectively influenced by the conformational preferences of the  $\alpha$ -helices of muscle acylphosphatase" **J Biol Chem**, 276, 37149-37154 (2001).
389. M. Vendruscolo, E. Paci, C.M. Dobson, and M. Karplus, "Three key residues form a critical contact network in a protein folding transition state" **Nature**, 409, 641-645 (2001).
390. R. Wain, T.A. Pertinhez, E.J. Tomlinson, L. Hong, C.M. Dobson, S.J. Ferguson, and L.J. Smith, "The cytochrome c fold can be attained from a compact apo state by occupancy of a nascent heme binding site" **J Biol Chem**, 276, 45813-45817 (2001).
391. R. Wijesinha-Bettoni, C.M. Dobson, and C. Redfield, "Comparison of the structural and dynamical properties of holo and apo bovine alpha-lactalbumin by NMR spectroscopy" **J Mol Biol**, 307, 885-898 (2001).
392. R. Wijesinha-Bettoni, C.M. Dobson, and C. Redfield, "Comparison of the denaturant-induced unfolding of the bovine and human alpha-lactalbumin molten globules" **J Mol Biol**, 312, 261-273 (2001).
393. J. Zurdo, J.I. Guijarro, and C.M. Dobson, "Preparation and characterization of purified amyloid fibrils" **J Am Chem Soc**, 123, 8141-8142 (2001).
394. J. Zurdo, J.I. Guijarro, J.L. Jimenez, H.R. Saibil, and C.M. Dobson, "Dependence on solution conditions of aggregation and amyloid formation by an SH3 domain" **J Mol Biol**, 311, 325-340 (2001).

## 2002

395. A.I. Azuaga, C.M. Dobson, P.L. Mateo, and F. Conejero-Lara, "Unfolding and aggregation during the thermal denaturation of streptokinase" **Eur J Biochem**, 269, 4121-4133 (2002).
396. M. Bucciantini, E. Giannoni, F. Chiti, F. Baroni, L. Formigli, J.S. Zurdo, N. Taddei, G. Ramponi, C.M. Dobson, and M. Stefani, "Inherent toxicity of aggregates implies a common mechanism for protein misfolding diseases" **Nature**, 416, 507-511 (2002).
397. D. Canet, A.M. Last, P. Tito, M. Sunde, A. Spencer, D.B. Archer, C. Redfield, C.V. Robinson, and C.M. Dobson, "Local cooperativity in the unfolding of an amyloidogenic variant of human lysozyme" **Nat Struct Biol**, 9, 308-315 (2002).
398. J.A. Carver, R.A. Lindner, C. Lyon, D. Canet, H. Hernandez, C.M. Dobson, and C. Redfield, "The interaction of the molecular chaperone alpha-crystallin with unfolding alpha-lactalbumin: a structural and kinetic spectroscopic study" **J Mol Biol**, 318, 815-827 (2002).
399. F. Chiti, N. Taddei, F. Baroni, C. Capanni, M. Stefani, G. Ramponi, and C.M. Dobson, "Kinetic partitioning of protein folding and aggregation" **Nat Struct Biol**, 9, 137-143 (2002).
400. F. Chiti, M. Calamai, N. Taddei, M. Stefani, G. Ramponi and C.M. Dobson. "Studies of the aggregation of mutant proteins *in vitro* provide insights into the genetics of amyloid diseases" **Proc Natl Acad Sci USA**, 99, 16419-16426 (2002).
401. R. Davis, C.M. Dobson, and M. Vendruscolo, "Determination of the structures of distinct transition state ensembles for a beta-sheet peptide with parallel folding pathways" **J Chem Phys**, 117, 9510-9517 (2002).
402. M.L. de la Paz, K. Goldie, J. Zurdo, E. Lacroix, C.M. Dobson, A. Hoenger, and L. Serrano, "De novo designed peptide-based amyloid fibrils" **Proc Natl Acad Sci USA**, 99, 16052-16057 (2002).
403. C.M. Dobson, "Getting out of shape" **Nature**, 418, 729-730 (2002).
404. C.M. Dobson, "The structural basis of protein folding and its links with human disease" in **Conformational Diseases – a Compendium** (ed. B. Solomon, A. Taraboulos, and E. Katchalski-Katzir). Karger. Tunbridge Wells, p. 5-17 (2002).
405. M. Fändrich and C.M. Dobson, "The behaviour of polyamino acids reveals an inverse side chain effect in amyloid structure formation" **EMBO J**, 21, 5682-5690 (2002).
406. D. Hamada and C.M. Dobson, "A kinetic study of beta-lactoglobulin amyloid fibril formation promoted by urea" **Protein Sci**, 11, 2417-2426 (2002).
407. C.P. Jaronec, C.E. MacPhee, N.S. Astrof, C.M. Dobson, and R.G. Griffin, "Molecular conformation of a peptide fragment of transthyretin in an amyloid fibril" **Proc Natl Acad Sci USA**, 99, 16748-16753 (2002).
408. J.L. Jiménez, E.J. Nettleton, M. Bouchard, C.V. Robinson, C.M. Dobson, and H.R. Saibil, "The protofilament structure of insulin amyloid fibrils" **Proc Natl Acad Sci USA**, 99, 9196-9201 (2002).



409. J. Klein-Seetharaman, M. Oikawa, S.B. Grimshaw, J. Wirmer, E. Duchardt, T. Ueda, T. Imoto, L.J. Smith, C.M. Dobson, and H. Schwalbe, "Long-range interactions within a nonnative protein" **Science**, 295, 1719-1722 (2002).
410. C.E. Lyon, E.S. Suh, C.M. Dobson, and P.J. Hore, "Probing the exposure of tyrosine and tryptophan residues in partially folded proteins and folding intermediates by CIDNP pulse-labeling" **J Am Chem Soc**, 124, 13018-13024 (2002).
411. E. Paci, M. Vendruscolo, C.M. Dobson, and M. Karplus, "Determination of a transition state at atomic resolution from protein engineering data" **J Mol Biol**, 324, 151-163 (2002).
412. T.A. Pertinhez, M. Bouchard, R.A. Smith, C.M. Dobson, and L.J. Smith, "Stimulation and inhibition of fibril formation by a peptide in the presence of different concentrations of SDS" **FEBS Lett**, 529, 193-197 (2002).
413. A. Sandilands, A.M. Hutcheson, H.A. Long, A.R. Prescott, G. Vrensen, J. Loster, N. Klopp, R.B. Lutz, J. Graw, S. Masaki, C.M. Dobson, C.E. MacPhee, and R.A. Quinlan, "Altered aggregation properties of mutant gamma-crystallins cause inherited cataract" **EMBO J**, 21, 6005-6014 (2002).

### 2003

414. A.I. Azuaga, D. Canet, G. Smeenk, R. Berends, F. Titgemeijer, R. Duurkens, P.L. Mateo, R.M. Scheek, G.T. Robillard, C.M. Dobson, and N.A.J. Van Nuland, "Characterization of single-tryptophan mutants of histidine-containing phosphocarrier protein: Evidence for local rearrangements during folding from high concentrations of denaturant" **Biochemistry**, 42, 4883-4895 (2003).
415. D. Canet, C.E. Lyon, R.M. Scheek, G.T. Robillard, C.M. Dobson, P.J. Hore, and N.A.J. Van Nuland, "Rapid formation of non-native contacts during the folding of HPr revealed by real-time photo-CIDNP NMR and stopped-flow fluorescence experiments" **J Mol Biol**, 330, 397-407 (2003).
416. F. Chiti, M. Stefani, N. Taddei, G. Ramponi, and C.M. Dobson, "Rationalization of the effects of mutations on peptide and protein aggregation rates" **Nature**, 424, 805-808 (2003).
417. C.M. Dobson, "Protein folding and disease: a view from the first Horizon Symposium" **Nat Rev Drug Discov**, 2, 154-160 (2003).
418. C.M. Dobson, "Protein folding and misfolding" **Nature**, 426, 884-890 (2003).
419. C.M. Dobson, "Protein misfolding and its links with human disease" in **Molecular Informatics: Confronting Complexity** (ed. M.G. Hicks and C. Kettner). Beilstein. Frankfurt, p. 21-35 (2003).
420. M. Dumoulin, A.M. Last, A. Desmyter, K. Decanniere, D. Canet, G. Larsson, A. Spencer, D.B. Archer, J. Sasse, S. Muyldermans, L. Wyns, C. Redfield, A. Matagne, C.V. Robinson, and C.M. Dobson, "A camelid antibody fragment inhibits the formation of amyloid fibrils by human lysozyme" **Nature**, 424, 783-788 (2003).

421. M. Fändrich, V. Forge, K. Buder, M. Kittler, C.M. Dobson, and S. Diekmann, "Myoglobin forms amyloid fibrils by association of unfolded polypeptide segments" **Proc Natl Acad Sci USA**, 100, 15463-15468 (2003).
422. D.M. Hatters, C.A. MacRaid, R. Daniels, W.S. Gosal, N.H. Thomson, J.A. Jones, J.J. Davis, C.E. MacPhee, C.M. Dobson, and G.J. Howlett, "The circularization of amyloid fibrils formed by apolipoprotein C-II" **Biophys J**, 85, 3979-3990 (2003).
423. Y.O. Kamatari, C.M. Dobson, and T. Konno, "Structural dissection of alkaline-denatured pepsin" **Protein Sci**, 12, 717-724 (2003).
424. E. Laurine, C. Gregoire, M. Fandrich, S. Engemann, S. Marchal, L. Thion, M. Mohr, B. Monsarrat, B. Michel, C.M. Dobson, E. Wanker, M. Erard, and J.M. Verdier, "Lithostathine quadruple-helical filaments form proteinase K-resistant deposits in Creutzfeldt-Jakob disease" **J Biol Chem**, 278, 51770-51778 (2003).
425. K. Lindorff-Larsen, E. Paci, L. Serrano, C.M. Dobson, and M. Vendruscolo, "Calculation of mutational free energy changes in transition states for protein folding" **Biophys J**, 85, 1207-1214 (2003).
426. M. Malisauskas, V. Zamotin, J. Jass, W. Noppe, C.M. Dobson, and L.A. Morozova-Roche, "Amyloid protofilaments from the calcium-binding protein equine lysozyme: Formation of ring and linear structures depends on pH and metal ion concentration" **J Mol Biol**, 330, 879-890 (2003).
427. K.H. Mok, T. Nagashima, I.J. Day, J.A. Jones, C.J.V. Jones, C.M. Dobson, and P.J. Hore, "Rapid sample-mixing technique for transient NMR and photo-CIDNP spectroscopy: Applications to real-time protein folding" **J Am Chem Soc**, 125, 12484-12492 (2003).
428. M.R. Nilsson and C.M. Dobson, "In vitro characterization of lactoferrin aggregation and amyloid formation" **Biochemistry**, 42, 375-382 (2003).
429. M.R. Nilsson and C.M. Dobson, "Chemical modification of insulin in amyloid fibrils" **Protein Sci**, 12, 2637-2641 (2003).
430. P. Polverino de Laureto, N. Taddei, E. Frare, C. Capanni, S. Costantini, J. Zurdo, F. Chiti, C.M. Dobson, and A. Fontana, "Protein aggregation and amyloid fibril formation by an SH3 domain probed by limited proteolysis" **J Mol Biol**, 334, 129-141 (2003).
431. M. Stefani and C.M. Dobson, "Protein aggregation and aggregate toxicity: new insights into protein folding, misfolding diseases and biological evolution" **J Mol Med**, 81, 678-699 (2003).
432. M. Vendruscolo, E. Paci, C.M. Dobson, and M. Karplus, "Rare fluctuations of native proteins sampled by equilibrium hydrogen exchange" **J Am Chem Soc**, 125, 15686-15687 (2003).
433. M. Vendruscolo, E. Paci, M. Karplus, and C.M. Dobson, "Structures and relative free energies of partially folded states of proteins" **Proc Natl Acad Sci USA**, 100, 14817-14821 (2003).

434. M. Vendruscolo, J. Zurdo, C.E. MacPhee, and C.M. Dobson, "Protein folding and misfolding: a paradigm of self-assembly and regulation in complex biological systems" **Phil Trans A R Soc Lond**, 361, 1205-1222 (2003).

#### 2004

435. M. Bucciantini, G. Calloni, F. Chiti, L. Formigli, D. Nosi, C.M. Dobson, and M. Stefani, "Prefibrillar amyloid protein aggregates share common features of cytotoxicity" **J Biol Chem**, 279, 31374-31382 (2004).
436. J. Christodoulou, G. Larsson, P. Fucini, S.R. Connell, T.A. Pertinhez, C.L. Hanson, C. Redfield, K.H. Nierhaus, C.V. Robinson, J. Schleucher, and C.M. Dobson, "Heteronuclear NMR investigations of dynamic regions of intact *Escherichia coli* ribosomes" **Proc Natl Acad Sci USA**, 101, 10949-10954 (2004).
437. F.G. De Felice, M.N.N. Vieira, M.N.L. Meirelles, L.A. Morozova-Roche, C.M. Dobson, and S.T. Ferreira, "Formation of amyloid aggregates from human lysozyme and its disease-associated variants using hydrostatic pressure" **FASEB J**, 18, 1099-+ (2004).
438. C.M. Dobson, "Principles of protein folding, misfolding and aggregation" **Semin Cell Dev Biol**, 15, 3-16 (2004).
439. C.M. Dobson, "Protein chemistry. In the footsteps of alchemists" **Science**, 304, 1259-1262 (2004).
440. C.M. Dobson, "Experimental investigation of protein folding and misfolding" **Methods**, 34, 4-14 (2004).
441. C.M. Dobson, "Biological physics: Energy, information, life" **Nature**, 432, 444-445 (2004).
442. C.M. Dobson, "Chemical space and biology" **Nature**, 432, 824-828 (2004).
443. K.F. DuBay, A.P. Pawar, F. Chiti, J. Zurdo, C.M. Dobson, and M. Vendruscolo, "Prediction of the absolute aggregation rates of amyloidogenic polypeptide chains" **J Mol Biol**, 341, 1317-1326 (2004).
444. M. Dumoulin and C.M. Dobson, "Probing the origins, diagnosis and treatment of amyloid diseases using antibodies" **Biochimie**, 86, 589-600 (2004).
445. E. Frare, P. Polverino de Laureto, J. Zurdo, C.M. Dobson, and A. Fontana, "A highly amyloidogenic region of hen lysozyme" **J Mol Biol**, 340, 1153-1165 (2004).
446. R.J.C. Gilbert, P. Fucini, S. Connell, S.D. Fuller, K.H. Nierhaus, C.V. Robinson, C.M. Dobson, and D.I. Stuart, "Three-dimensional structures of translating ribosomes by cryo-EM" **Mol Cell**, 14, 57-66 (2004).
447. C.P. Jaronec, C.E. MacPhee, V.S. Bajaj, M.T. McMahon, C.M. Dobson, and R.G. Griffin, "High-resolution molecular structure of a peptide in an amyloid fibril determined by magic angle spinning NMR spectroscopy" **Proc Natl Acad Sci USA**, 101, 711-716 (2004).

448. Y.O. Kamatari, C.M. Dobson, and T. Konno, "Structural dissection of alkaline-denatured pepsin" **Spectroscopy**, 18, 227-236 (2004).
449. R.A. Kammerer, D. Kostrewa, J. Zurdo, A. Detken, C. Garcia-Echeverria, J.D. Green, S.A. Muller, B.H. Meier, F.K. Winkler, C.M. Dobson, and M.O. Steinmetz, "Exploring amyloid formation by a de novo design" **Proc Natl Acad Sci USA**, 101, 4435-4440 (2004).
450. D.M. Korzhnev, X. Salvatella, M. Vendruscolo, A.A. Di Nardo, A.R. Davidson, C.M. Dobson, and L.E. Kay, "Low-populated folding intermediates of Fyn SH3 characterized by relaxation dispersion NMR" **Nature**, 430, 586-590 (2004).
451. M.R. Krebs, C.E. Macphee, A.F. Miller, I.E. Dunlop, C.M. Dobson, and A.M. Donald, "The formation of spherulites by amyloid fibrils of bovine insulin" **Proc Natl Acad Sci USA**, 101, 14420-14424 (2004).
452. M.R. Krebs, L.A. Morozova-Roche, K. Daniel, C.V. Robinson, and C.M. Dobson, "Observation of sequence specificity in the seeding of protein amyloid fibrils" **Protein Sci**, 13, 1933-1938 (2004).
453. K. Lindorff-Larsen, S. Kristjansdottir, K. Teilum, W. Fieber, C.M. Dobson, F.M. Poulsen, and M. Vendruscolo, "Determination of an ensemble of structures representing the denatured state of the bovine acyl-coenzyme a binding protein" **J Am Chem Soc**, 126, 3291-3299 (2004).
454. K. Lindorff-Larsen, M. Vendruscolo, E. Paci, and C.M. Dobson, "Transition states for protein folding have native topologies despite high structural variability" **Nat Struct Mol Biol**, 11, 443-449 (2004).
455. S. Meehan, Y. Berry, B. Luisi, C.M. Dobson, J.A. Carver, and C.E. MacPhee, "Amyloid fibril formation by lens crystallin proteins and its implications for cataract formation" **J Biol Chem**, 279, 3413-3419 (2004).
456. C.M. Quezada, B.A. Schulman, J.J. Froggatt, C.M. Dobson, and C. Redfield, "Local and global cooperativity in the human alpha-lactalbumin molten globule" **J Mol Biol**, 338, 149-158 (2004).
457. S. Ventura, J. Zurdo, S. Narayanan, M. Parreno, R. Mangués, B. Reif, F. Chiti, E. Giannoni, C.M. Dobson, F.X. Aviles, and L. Serrano, "Short amino acid stretches can mediate amyloid formation in globular proteins: The Src homology 3 (SH3) case" **Proc Natl Acad Sci USA**, 101, 7258-7263 (2004).
458. C.F. Wright, J. Christodoulou, C.M. Dobson, and J. Clarke, "The importance of loop length in the folding of an immunoglobulin domain" **Protein Eng Des Sel**, 17, 443-453 (2004).

## 2005

459. M. Calamai, C. Canale, A. Relini, M. Stefani, F. Chiti, and C.M. Dobson, "Reversal of protein aggregation provides evidence for multiple aggregated States" **J Mol Biol**, 346, 603-616 (2005).
460. M. Calamai, F. Chiti, and C.M. Dobson, "Amyloid fibril formation can proceed from different conformations of a partially unfolded protein" **Biophys J**, 89, 4201-4210 (2005).

461. G. Calloni, S. Zoffoli, M. Stefani, C.M. Dobson, and F. Chiti, "Investigating the effects of mutations on protein aggregation in the cell" **J Biol Chem**, 280, 10607-10613 (2005).
462. N. Carulla, G.L. Caddy, D.R. Hall, J. Zurdo, M. Gairí, M. Feliz, E. Giralt, C.V. Robinson, and C.M. Dobson, "Molecular recycling within amyloid fibrils" **Nature**, 436, 554-558 (2005).
463. E.S. Collins, J. Wirmer, K. Hirai, H. Tachibana, S. Segawa, C.M. Dobson, and H. Schwalbe, "Characterisation of disulfide-bond dynamics in non-native states of lysozyme and its disulfide deletion mutants by NMR" **ChemBioChem**, 6, 1619-1627 (2005).
464. M.M. Dedmon, J. Christodoulou, M.R. Wilson, and C.M. Dobson, "Heat shock protein 70 inhibits alpha-synuclein fibril formation via preferential binding to prefibrillar species" **J Biol Chem**, 280, 14733-14740 (2005).
465. M.M. Dedmon, K. Lindorff-Larsen, J. Christodoulou, M. Vendruscolo, and C.M. Dobson, "Mapping long-range interactions in alpha-synuclein using spin-label NMR and ensemble molecular dynamics simulations" **J Am Chem Soc**, 127, 476-477 (2005).
466. C. Dirix, F. Meersman, C.E. MacPhee, C.M. Dobson, and K. Heremans, "High hydrostatic pressure dissociates early aggregates of TTR105-115, but not the mature amyloid fibrils" **J Mol Biol**, 347, 903-909 (2005).
467. C.M. Dobson, "Amyloidosis and protein folding - Response" **Science**, 307, 43-44 (2005).
468. C.M. Dobson, "Structural biology - Prying into prions" **Nature**, 435, 747-749 (2005).
469. C.M. Dobson, "An overview of protein misfolding diseases" in **Protein Folding Handbook II** (ed. J. Buchner and T. Kiefhaber). Wiley-VCH. Weinheim, Germany, p. 1093-1113 (2005).
470. M. Dumoulin, V. Bellotti, and C.M. Dobson, "Hereditary systemic amyloidosis associated with mutational variants of human lysozyme" in **Amyloid Proteins: The Beta Pleated Sheet Conformation and Disease** (ed. J. Sipe). Wiley-VCH Verlag. Weinheim, Germany, p. 635-656 (2005).
471. M. Dumoulin, D. Canet, A.M. Last, E. Pardon, D.B. Archer, S. Muyldermans, L. Wyns, A. Matagne, C.V. Robinson, C. Redfield, and C.M. Dobson, "Reduced global cooperativity is a common feature underlying the amyloidogenicity of pathogenic lysozyme mutations" **J Mol Biol**, 346, 773-788 (2005).
472. S.B. Fowler, S. Poon, R. Muff, F. Chiti, C.M. Dobson, and J. Zurdo, "Rational design of aggregation-resistant bioactive peptides: reengineering human calcitonin" **Proc Natl Acad Sci USA**, 102, 10105-10110 (2005).
473. D. Hall, N. Hirota, and C.M. Dobson, "A toy model for predicting the rate of amyloid formation from unfolded protein" **J Mol Biol**, 351, 195-205 (2005).

474. R.J.K. Johnson, J. Christodoulou, M. Dumoulin, G.L. Caddy, M.J.C. Alcocer, G.J. Murtagh, J.R. Kumita, G. Larsson, C.V. Robinson, D.B. Archer, B. Luisi, and C.M. Dobson, "Rationalising lysozyme amyloidosis: Insights from the structure and solution dynamics of T70N lysozyme" **J Mol Biol**, 352, 823-836 (2005).
475. B.L. Kagan and C.M. Dobson, "Amyloidosis and protein folding" (multiple letters) **Science**, 307, 42-44 (2005).
476. S. Kristjansdottir, K. Lindorff-Larsen, W. Fieber, C.M. Dobson, M. Vendruscolo, and F.M. Poulsen, "Formation of native and non-native interactions in ensembles of denatured ACBP molecules from paramagnetic relaxation enhancement studies" **J Mol Biol**, 347, 1053-1062 (2005).
477. K. Lindorff-Larsen, R.B. Best, M.A. Depristo, C.M. Dobson, and M. Vendruscolo, "Simultaneous determination of protein structure and dynamics" **Nature**, 433, 128-132 (2005).
478. K. Lindorff-Larsen, P. Røgen, E. Paci, M. Vendruscolo, and C.M. Dobson, "Protein folding and the organization of the protein topology universe" **Trends Biochem Sci**, 30, 13-19 (2005).
479. G. Marcon, G. Plakoutsi, C. Canale, A. Relini, N. Taddei, C.M. Dobson, G. Ramponi, and F. Chiti, "Amyloid formation from HypF-N under conditions in which the protein is initially in its native state" **J Mol Biol**, 347, 323-335 (2005).
480. K.H. Mok, T. Nagashima, I.J. Day, P.J. Hore, and C.M. Dobson, "Multiple subsets of side-chain packing in partially folded states of alpha-lactalbumins" **Proc Natl Acad Sci USA**, 102, 8899-8904 (2005).
481. E. Paci, K. Lindorff-Larsen, C.M. Dobson, M. Karplus, and M. Vendruscolo, "Transition state contact orders correlate with protein folding rates" **J Mol Biol**, 352, 495-500 (2005).
482. C. Parrini, N. Taddei, M. Ramazzotti, D. Degl'Innocenti, G. Ramponi, C.M. Dobson, and F. Chiti, "Glycine residues appear to be evolutionarily conserved for their ability to inhibit aggregation" **Structure**, 13, 1143-1151 (2005).
483. A.P. Pawar, K.F. Dubay, J. Zurdo, F. Chiti, M. Vendruscolo, and C.M. Dobson, "Prediction of "aggregation-prone" and "aggregation-susceptible" regions in proteins associated with neurodegenerative diseases" **J Mol Biol**, 350, 379-392 (2005).
484. G. Plakoutsi, F. Bemporad, M. Calamai, N. Taddei, C.M. Dobson, and F. Chiti, "Evidence for a mechanism of amyloid formation involving molecular reorganisation within native-like precursor aggregates" **J Mol Biol**, 351, 910-922 (2005).
485. C.B. Post and C.M. Dobson, "Frontiers in computational biophysics: A symposium in honor of Martin Karplus" **Structure**, 13, 949-952 (2005).
486. X. Salvatella, C.M. Dobson, A.R. Fersht, and M. Vendruscolo, "Determination of the folding transition states of barnase by using Phil-value-restrained simulations validated by double mutant PhilJ-values" **Proc Natl Acad Sci USA**, 102, 12389-12394 (2005).

487. D.C. Thorn, S. Meehan, M. Sunde, A. Rekas, S.L. Gras, C.E. MacPhee, C.M. Dobson, M.R. Wilson, and J.A. Carver, "Amyloid fibril formation by bovine milk kappa-casein and its inhibition by the molecular chaperones alpha(s-) and beta-casein" **Biochemistry**, 44, 17027-17036 (2005).
488. M. Vendruscolo and C.M. Dobson, "Towards complete descriptions of the free-energy landscapes of proteins" **Phil Trans A R Soc Lond**, 363, 433-450 (2005).
489. M. Vendruscolo and C.M. Dobson, "A glimpse at the organization of the protein universe" **Proc Natl Acad Sci USA**, 102, 5641-5642 (2005).
490. R. Wain, L.J. Smith, and C.M. Dobson, "Oxidative refolding of amyloidogenic variants of human lysozyme" **J Mol Biol**, 351, 662-671 (2005).
491. C.F. Wright, S.A. Teichmann, J. Clarke, and C.M. Dobson, "The importance of sequence diversity in the aggregation and evolution of proteins" **Nature**, 438, 878-881 (2005).

## 2006

492. R. Bader, R. Bamford, J. Zurdo, B.F. Luisi, and C.M. Dobson, "Probing the mechanism of amyloidogenesis through a tandem repeat of the PI3-SH3 domain suggests a generic model for protein aggregation and fibril formation" **J Mol Biol**, 356, 189-208 (2006).
493. R. Bader, M.A. Seeliger, S.E. Kelly, L.L. Ilag, F. Meersman, A. Limones, B.F. Luisi, C.M. Dobson, and L.S. Itzhaki, "Folding and fibril formation of the cell cycle protein Cks1" **J Biol Chem**, 281, 18816-18824 (2006).
494. S. Baglioni, F. Casamenti, M. Bucciantini, L.M. Luheshi, N. Taddei, F. Chiti, C.M. Dobson, and M. Stefani, "Prefibrillar amyloid aggregates could be generic toxins in higher organisms" **J Neurosci**, 26, 8160-8167 (2006).
495. A.J. Baldwin, R. Bader, J. Christodoulou, C.E. MacPhee, C.M. Dobson, and P.D. Barker, "Cytochrome display on amyloid fibrils" **J Am Chem Soc**, 128, 2162-2163 (2006).
496. M. Calamai, J.R. Kumita, J. Mifsud, C. Parrini, M. Ramazzotti, G. Ramponi, N. Taddei, F. Chiti, and C.M. Dobson, "Nature and significance of the interactions between amyloid fibrils and biological polyelectrolytes" **Biochemistry**, 45, 12806-12815 (2006).
497. V. Chandran, E.J. Stollar, K. Lindorff-Larsen, J.F. Harper, W.J. Chazin, C.M. Dobson, B.F. Luisi, and J. Christodoulou, "Structure of the regulatory apparatus of a calcium-dependent protein kinase (CDPK): A novel mode of calmodulin-target recognition" **J Mol Biol**, 357, 400-410 (2006).
498. F. Chiti and C.M. Dobson, "Protein misfolding, functional amyloid, and human disease" **Ann Rev Biochem**, 75, 333-366 (2006).
499. G.L. Devlin, T.P.J. Knowles, A. Squires, M.G. McCammon, S.L. Gras, M.R. Nilsson, C.V. Robinson, C.M. Dobson, and C.E. MacPhee, "The component polypeptide chains of bovine insulin nucleate or inhibit aggregation of the parent protein in a conformation-dependent manner" **J Mol Biol**, 360, 497-509 (2006).

500. S. Di Gaetano, F. Guglielmi, A. Arciello, P. Mangione, M. Monti, D. Pagnozzi, S. Raimondi, S. Giorgetti, S. Orru, C. Canale, P. Pucci, C.M. Dobson, V. Bellotti, and R. Piccoli, "Recombinant amyloidogenic domain of ApoA-I: Analysis of its fibrillogenic potential" **Biochem Biophys Res Commun**, 351, 223-228 (2006).
501. C.M. Dobson, "Protein aggregation and its consequences for human disease" **Protein Pept Lett**, 13, 219-227 (2006).
502. C.M. Dobson, "An accidental breach of a protein's natural defenses" **Nat Struct Mol Biol**, 13, 295-297 (2006).
503. C.M. Dobson, "The generic nature of protein folding and misfolding" in **Protein Misfolding, Aggregation and Conformational Diseases** (ed. V.N. Uversky and A.L. Fink). Springer. New York, p. 21-41 (2006).
504. M. Dumoulin, J.R. Kumita, and C.M. Dobson, "Normal and aberrant biological self-assembly: Insights from studies of human lysozyme and its amyloidogenic variants" **Acc Chem Res**, 39, 603-610 (2006).
505. E. Frare, M.F. Mossuto, P. Polverino de Laureto, M. Dumoulin, C.M. Dobson, and A. Fontana, "Identification of the core structure of lysozyme amyloid fibrils by proteolysis" **J Mol Biol**, 361, 551-561 (2006).
506. J. Gsponer, H. Hopearuoho, A. Cavalli, C.M. Dobson, and M. Vendruscolo, "Geometry, energetics, and dynamics of hydrogen bonds in proteins: structural information derived from NMR scalar couplings" **J Am Chem Soc**, 128, 15127-15135 (2006).
507. D. Hall and C.M. Dobson, "Expanding to fill the gap: a possible role for inert biopolymers in regulating the extent of the 'macromolecular crowding' effect" **FEBS Lett**, 580, 2584-2590 (2006).
508. T.P.J. Knowles, J.F. Smith, A. Craig, C.M. Dobson, and M.E. Welland, "Spatial persistence of angular correlations in amyloid fibrils" **Phys Rev Lett**, 96, 238301-238301 (2006).
509. J.R. Kumita, R.J.K Johnson, M.J. Alcocer, M. Dumoulin, F. Holmqvist, M.G. McCammon, C.V. Robinson, D.B. Archer, and C.M. Dobson, "Impact of the native-state stability of human lysozyme variants on protein secretion by *Pichia pastoris*" **FEBS J**, 273, 711-720 (2006).
510. F. Meersman and C.M. Dobson, "Probing the pressure-temperature stability of amyloid fibrils provides new insights into their molecular properties" **Biochim Biophys Acta**, 1764, 452-460 (2006).
511. F. Meersman, C.M. Dobson, and K. Heremans, "Protein unfolding, amyloid fibril formation and configurational energy landscapes under high pressure conditions" **Chem Soc Rev**, 35, 908-917 (2006).
512. J.F. Smith, T.P.J. Knowles, C.E. Macphee, C.M. Dobson, and M.E. Welland, "Characterization of the nanoscale properties of individual amyloid fibrils" **Proc Natl Acad Sci USA**, 103, 15806-15811 (2006).



513. A.M. Squires, G.L. Devlin, S.L. Gras, A.K. Tickler, C.E. MacPhee, and C.M. Dobson, "X-ray scattering study of the effect of hydration on the cross-beta structure of amyloid fibrils" **J Am Chem Soc**, 128, 11738-11739 (2006).
514. D.C. Vaz, J.R. Rodrigues, W. Sebald, C.M. Dobson, and R.M.M. Brito, "Enthalpic and entropic contributions mediate the role of disulfide bonds on the conformational stability of interleukin-4" **Protein Sci**, 15, 33-44 (2006).
515. M. Vendruscolo and C.M. Dobson, "Structural biology. Dynamic visions of enzymatic reactions" **Science**, 313, 1586-1587 (2006).

## 2007

516. S. Auer, C.M. Dobson, and M. Vendruscolo, "Characterization of the nucleation barriers for protein aggregation and amyloid formation" **HFSP J**, 1, 137-146 (2007).
517. S. Auer, M.A. Miller, S.V. Krivov, C.M. Dobson, M. Karplus, and M. Vendruscolo, "Importance of metastable states in the free energy landscapes of polypeptide chains" **Phys Rev Lett**, 99, 178104 (2007).
518. A.J. Baldwin, J. Christodoulou, P.D. Barker, C.M. Dobson, and G. Lippens, "Contribution of rotational diffusion to pulsed field gradient diffusion measurements" **J Chem Phys**, 127, 114505 (2007).
519. A. Cavalli, X. Salvatella, C.M. Dobson, and M. Vendruscolo, "Protein structure determination from NMR chemical shifts" **Proc Natl Acad Sci USA**, 104, 9615-9620 (2007).
520. M. Cheon, I. Chang, S. Mohanty, L.M. Luheshi, C.M. Dobson, M. Vendruscolo, and G. Favrin, "Structural reorganisation and potential toxicity of oligomeric species formed during the assembly of amyloid fibrils" **PLoS Comput Biol**, 3, 1727-1738 (2007).
521. C.M. Dobson, "Diseases of protein misfolding" in **Genes and Common Diseases** (ed. A. Wright and N. Hastie). Cambridge Univ Press. Cambridge, p. 113-131 (2007).
522. M. Dumoulin, R.J.K. Johnson, V. Bellotti, and C.M. Dobson, "Human lysozyme" in **Part B, Protein Misfolding, Aggregation and Conformational Diseases** (ed. V.N. Uversky and A.L. Fink). Springer. New York, p. 285-308 (2007).
523. S.T. Hsu, P. Fucini, L.D. Cabrita, H. Launay, C.M. Dobson, and J. Christodoulou, "Structure and dynamics of a ribosome-bound nascent chain by NMR spectroscopy" **Proc Natl Acad Sci USA**, 104, 16516-16521 (2007).
524. T.P.J Knowles, A.W. Fitzpatrick, S. Meehan, H.R. Mott, M. Vendruscolo, C.M. Dobson, and M.E. Welland, "Role of intermolecular forces in defining material properties of protein nanofibrils" **Science**, 318, 1900-1903 (2007).
525. T.P.J. Knowles, W.M. Shu, G.L. Devlin, S. Meehan, S. Auer, C.M. Dobson, and M.E. Welland, "Kinetics and thermodynamics of amyloid formation from direct measurements of fluctuations in fibril mass" **Proc Natl Acad Sci USA**, 104, 10016-10021 (2007).

526. J.R. Kumita, S. Poon, G.L. Caddy, C.L. Hagan, M. Dumoulin, J.J. Yerbury, E.M. Stewart, C.V. Robinson, M.R. Wilson, and C.M. Dobson, "The extracellular chaperone clusterin potently inhibits human lysozyme amyloid formation by interacting with prefibrillar species" **J Mol Biol**, 369, 157-167 (2007).
527. L.M. Luheshi, G.G. Tartaglia, A.C. Brorsson, A.P. Pawar, I.E. Watson, F. Chiti, M. Vendruscolo, D.A. Lomas, C.M. Dobson, and D.C. Crowther, "Systematic in vivo analysis of the intrinsic determinants of amyloid Beta pathogenicity" **PLoS Biol**, 5, e290 (2007).
528. S. Meehan, T.P. Knowles, A.J. Baldwin, J.F. Smith, A.M. Squires, P. Clements, T.M. Treweek, H. Ecroyd, G.G. Tartaglia, M. Vendruscolo, C.E. Macphee, C.M. Dobson, and J.A. Carver, "Characterisation of amyloid fibril formation by small heat-shock chaperone proteins human alphaA-, alphaB- and R120G alphaB-crystallins" **J Mol Biol**, 372, 470-484 (2007).
529. J. Meinhardt, G.G. Tartaglia, A. Pawar, T. Christopeit, P. Hortschansky, V. Schroeckh, C.M. Dobson, M. Vendruscolo, and M. Fändrich, "Similarities in the thermodynamics and kinetics of aggregation of disease-related Abeta(1-40) peptides" **Protein Sci**, 16, 1214-1222 (2007).
530. G.G. Tartaglia, S. Pechmann, C.M. Dobson, and M. Vendruscolo, "Life on the edge: a link between gene expression levels and aggregation rates of human proteins" **Trends Biochem Sci**, 32, 204-206 (2007).
531. M. Vendruscolo and C.M. Dobson, "Chemical biology: More charges against aggregation" **Nature**, 449, 555 (2007).
532. J.J. Yerbury, S. Poon, S. Meehan, B. Thompson, J.R. Kumita, C.M. Dobson, and M.R. Wilson, "The extracellular chaperone clusterin influences amyloid formation and toxicity by interacting with prefibrillar structures" **FASEB J**, 21, 2312-2322 (2007).

## 2008

533. S. Auer, C.M. Dobson, M. Vendruscolo, and A. Maritan, "Self-templated nucleation in peptide and protein aggregation" **Phys Rev Lett**, 101, 258101 (2008).
534. S. Auer, F. Meersman, C.M. Dobson, and M. Vendruscolo, "A generic mechanism of emergence of amyloid protofilaments from disordered oligomeric aggregates" **PLoS Comput Biol**, 4, e1000222 (2008).
535. A.J. Baldwin, S.J. Anthony-Cahill, T.P.J. Knowles, G. Lippens, J. Christodoulou, P.D. Barker, and C.M. Dobson, "Measurement of amyloid fibril length distributions by inclusion of rotational motion in solution NMR diffusion measurements" **Angew Chem Int Ed Engl**, 47, 3385-3387 (2008).
536. G. Calloni, C. Lendel, S. Campioni, S. Giannini, A. Gliozzi, A. Relini, M. Vendruscolo, C.M. Dobson, X. Salvatella, and F. Chiti, "Structure and dynamics of a partially folded protein are decoupled from its mechanism of aggregation" **J Am Chem Soc**, 130, 13040-13050 (2008).

537. P.H. Chan, E. Pardon, L. Menzer, E. De Genst, J.R. Kumita, J. Christodoulou, D. Saerens, A. Brans, F. Bouillenne, D.B. Archer, C.V. Robinson, S. Muyldermans, A. Matagne, C. Redfield, L. Wyns, C.M. Dobson, and M. Dumoulin, "Engineering a camelid antibody fragment that binds to the active site of human lysozyme and inhibits its conversion into amyloid fibrils" **Biochemistry**, 47, 11041-11054 (2008).
538. M. Cheon, G. Favrin, I. Chang, C.M. Dobson, and M. Vendruscolo, "Calculation of the free energy barriers in the oligomerisation of Abeta peptide fragments" **Front Biosci**, 13, 5614-5622 (2008).
539. S. Dalal, D. Canet, S.E. Kaiser, C.M. Dobson, and L. Regan, "Conservation of mechanism, variation of rate: folding kinetics of three homologous four-helix bundle proteins" **Protein Eng Des Sel**, 21, 197-206 (2008).
540. C.M. Dobson, "Protein folding and misfolding: From atoms to organisms" in **Physical Biology: From Atoms to Medicine** (ed. A.H. Zewail). Imperial College Press. London, p. 289-335 (2008).
541. S.L. Gras, A.K. Tickler, A.M. Squires, G.L. Devlin, M.A. Horton, C.M. Dobson, and C.E. MacPhee, "Functionalised amyloid fibrils for roles in cell adhesion" **Biomaterials**, 29, 1553-1562 (2008).
542. J. Gsponer, J. Christodoulou, A. Cavalli, J.M. Bui, B. Richter, C.M. Dobson, and M. Vendruscolo, "A coupled equilibrium shift mechanism in calmodulin-mediated signal transduction" **Structure**, 16, 736-746 (2008).
543. T.P.J. Knowles, W. Shu, F. Huber, H.P. Lang, C. Gerber, C.M. Dobson, and M.E. Welland, "Label-free detection of amyloid growth with microcantilever sensors" **Nanotechnology**, 19, (2008).
544. L.M. Luheshi, D.C. Crowther, and C.M. Dobson, "Protein misfolding and disease: from the test tube to the organism" **Curr Opin Chem Biol**, 12, 25-31 (2008).
545. B. Macao, W. Hoyer, A. Sandberg, A.C. Brorsson, C.M. Dobson, and T. Hard, "Recombinant amyloid beta-peptide production by coexpression with an affibody ligand" **BMC Biotechnol**, 8, (2008).
546. A. Orte, N.R. Birkett, R.W. Clarke, G.L. Devlin, C.M. Dobson, and D. Klenerman, "Direct characterization of amyloidogenic oligomers by single-molecule fluorescence" **Proc Natl Acad Sci USA**, 105, 14424-14429 (2008).
547. R.C. Rivers, J.R. Kumita, G.G. Tartaglia, M.M. Dedmon, A. Pawar, M. Vendruscolo, C.M. Dobson, and J. Christodoulou, "Molecular determinants of the aggregation behavior of alpha- and beta-synuclein" **Protein Sci**, 17, 887-898 (2008).
548. C. Roodveldt, J. Christodoulou, and C.M. Dobson, "Immunological features of alpha-synuclein in Parkinson's disease" **J Cell Mol Med**, 12, 1820-1829 (2008).
549. B. Strodel, A.W. Fitzpatrick, M. Vendruscolo, C.M. Dobson, and D.J. Wales, "Characterizing the first steps of amyloid formation for the ccbeta peptide" **J Phys Chem B**, 112, 9998-10004 (2008).

550. G.G. Tartaglia, A.P. Pawar, S. Campioni, C.M. Dobson, F. Chiti, and M. Vendruscolo, "Prediction of aggregation-prone regions in structured proteins" **J Mol Biol**, 380, 425-436 (2008).
551. N.A.J. van Nuland, C.M. Dobson, and L. Regan, "Characterization of folding the four-helix bundle protein Rop by real-time NMR" **Protein Eng Des Sel**, 21, 165-170 (2008).
552. P. Várnai, C.M. Dobson, and M. Vendruscolo, "Determination of the transition state ensemble for the folding of ubiquitin from a combination of Phi and Psi analyses" **J Mol Biol**, 377, 575-588 (2008).

## 2009

553. J.R. Allison, P. Varnai, C.M. Dobson, and M. Vendruscolo, "Determination of the free energy landscape of alpha-synuclein using spin label nuclear magnetic resonance measurements" **J Am Chem Soc**, 131, 18314-18326 (2009).
554. M.J. Bayro, T. Maly, N.R. Birkett, C.M. Dobson, and R.G. Griffin, "Long-range correlations between aliphatic <sup>13</sup>C nuclei in protein MAS NMR spectroscopy" **Angew Chem Int Ed Engl**, 48, 5708-5710 (2009).
555. C.R. Bodner, C.M. Dobson, and A. Bax, "Multiple tight phospholipid-binding modes of alpha-synuclein revealed by solution NMR spectroscopy" **J Mol Biol**, 390, 775-790 (2009).
556. A.K. Buell, G.G. Tartaglia, N.R. Birkett, C.A. Waudby, M. Vendruscolo, X. Salvatella, M.E. Welland, C.M. Dobson, and T.P. Knowles, "Position-dependent electrostatic protection against protein aggregation" **ChemBioChem**, 10, 1309-1312 (2009).
557. J.M. Bui, J. Gsponer, M. Vendruscolo, and C.M. Dobson, "Analysis of sub-tauc and supra-tauc motions in protein Gbeta1 using molecular dynamics simulations" **Biophys J**, 97, 2513-2520 (2009).
558. L.D. Cabrita, S.T. Hsu, H. Launay, C.M. Dobson, and J. Christodoulou, "Probing ribosome-nascent chain complexes produced in vivo by NMR spectroscopy" **Proc Natl Acad Sci USA**, 106, 22239-22244 (2009).
559. M. Calamai, G.G. Tartaglia, M. Vendruscolo, F. Chiti, and C.M. Dobson, "Mutational analysis of the aggregation-prone and disaggregation-prone regions of acylphosphatase" **J Mol Biol**, 387, 965-974 (2009).
560. N. Carulla, M. Zhou, M. Arimon, M. Gairi, E. Giralt, C.V. Robinson, and C.M. Dobson, "Experimental characterization of disordered and ordered aggregates populated during the process of amyloid fibril formation" **Proc Natl Acad Sci USA**, 106, 7828-7833 (2009).
561. F. Chiti and C.M. Dobson, "Amyloid formation by globular proteins under native conditions" **Nat Chem Biol**, 5, 15-22 (2009).
562. C.M. Dobson, "Protein misfolding diseases and the key role played by the interactions of polypeptides with water" in **Water and Biomolecules** (ed. K. Kuwajima, Y. Goto, F. Hirata, M. Kataoka, and M. Terazima). Springer Verlag p. 241-264 (2009).

563. E. Frare, M.F. Mossuto, P. Polverino de Laureto, S. Tolin, L. Menzer, M. Dumoulin, C.M. Dobson, and A. Fontana, "Characterization of oligomeric species on the aggregation pathway of human lysozyme" **J Mol Biol**, 387, 17-27 (2009).
564. D. Hamada, T. Tanaka, G.G. Tartaglia, A. Pawar, M. Vendruscolo, M. Kawamura, A. Tamura, N. Tanaka, and C.M. Dobson, "Competition between folding, native-state dimerisation and amyloid aggregation in beta-lactoglobulin" **J Mol Biol**, 386, 878-890 (2009).
565. S.T. Hsu, C. Behrens, L.D. Cabrita, and C.M. Dobson, "<sup>1</sup>H, <sup>15</sup>N and <sup>13</sup>C assignments of yellow fluorescent protein (YFP) Venus" **Biomol NMR Assign**, 3, 67-72 (2009).
566. S.T. Hsu, C.W. Bertoncini, and C.M. Dobson, "Use of protonless NMR spectroscopy to alleviate the loss of information resulting from exchange-broadening" **J Am Chem Soc**, 131, 7222-7223 (2009).
567. S.T. Hsu, L.D. Cabrita, J. Christodoulou, and C.M. Dobson, "<sup>1</sup>H, <sup>15</sup>N and <sup>13</sup>C assignments of domain 5 of Dictyostelium discoideum gelation factor (ABP-120) in its native and 8M urea-denatured states" **Biomol NMR Assign**, 3, 29-31 (2009).
568. S.T. Hsu, L.D. Cabrita, P. Fucini, J. Christodoulou, and C.M. Dobson, "Probing side-chain dynamics of a ribosome-bound nascent chain using methyl NMR spectroscopy" **J Am Chem Soc**, 131, 8366-8367 (2009).
569. S.T. Hsu, L.D. Cabrita, P. Fucini, C.M. Dobson, and J. Christodoulou, "Structure, dynamics and folding of an immunoglobulin domain of the gelation factor (ABP-120) from Dictyostelium discoideum" **J Mol Biol**, 388, 865-879 (2009).
570. S.T. Hsu and C.M. Dobson, "<sup>1</sup>H, <sup>15</sup>N and <sup>13</sup>C assignments of the dimeric ribosome binding domain of trigger factor from Escherichia coli" **Biomol NMR Assign**, 3, 17-20 (2009).
571. S.T.D. Hsu, L.D. Cabrita, P. Fucini, C.M. Dobson, and J. Christodoulou, "Probing protein folding on the ribosome by solution state NMR spectroscopy" **J Biomol Struct Dyn**, 26, 846-846 (2009).
572. T.P. Knowles, C.A. Waudby, G.L. Devlin, S.I. Cohen, A. Aguzzi, M. Vendruscolo, E.M. Terentjev, M.E. Welland, and C.M. Dobson, "An analytical solution to the kinetics of breakable filament assembly" **Science**, 326, 1533-1537 (2009).
573. C. Lendel, C.W. Bertoncini, N. Cremades, C.A. Waudby, M. Vendruscolo, C.M. Dobson, D. Schenk, J. Christodoulou, and G. Toth, "On the mechanism of nonspecific inhibitors of protein aggregation: dissecting the interactions of alpha-synuclein with Congo red and Lacmoid" **Biochemistry**, 48, 8322-8334 (2009).
574. L.M. Luheshi and C.M. Dobson, "Bridging the gap: from protein misfolding to protein misfolding diseases" **FEBS Lett**, 583, 2581-2586 (2009).
575. S. Poon, N.R. Birkett, S.B. Fowler, B.F. Luisi, C.M. Dobson, and J. Zurdo, "Amyloidogenicity and aggregate cytotoxicity of human glucagon-like peptide-1 (hGLP-1)" **Protein Pept Lett**, 16, 1548-1556 (2009).

576. A.E. Porter, T.P. Knowles, K. Muller, S. Meehan, E. McGuire, J. Skepper, M.E. Welland, and C.M. Dobson, "Imaging amyloid fibrils within cells using a Se-labelling strategy" **J Mol Biol**, 392, 868-871 (2009).
577. P. Robustelli, A. Cavalli, C.M. Dobson, M. Vendruscolo, and X. Salvatella, "Folding of small proteins by Monte Carlo simulations with chemical shift restraints without the use of molecular fragment replacement or structural homology" **J Phys Chem B**, 113, 7890-7896 (2009).
578. C. Roodveldt, C.W. Bertoncini, A. Andersson, A.T. van der Goot, S.T. Hsu, R. Fernández-Montesinos, J. de Jong, T.J. van Ham, E.A. Nollen, D. Pozo, J. Christodoulou, and C.M. Dobson, "Chaperone proteostasis in Parkinson's disease: stabilization of the Hsp70/alpha-synuclein complex by Hip" **EMBO J**, 28, 3758-3770 (2009).
579. G.G. Tartaglia, S. Pechmann, C.M. Dobson, and M. Vendruscolo, "A relationship between mRNA expression levels and protein solubility in *E. coli*" **J Mol Biol**, 388, 381-389 (2009).
580. M. Vendruscolo and C.M. Dobson, "Quantitative approaches to defining normal and aberrant protein homeostasis" **Faraday Discuss**, 143, 277-291 (2009).
581. A. Vuchelen, E. O'Day, E. De Genst, E. Pardon, L. Wyns, M. Dumoulin, C.M. Dobson, J. Christodoulou, and S.T. Hsu, "(1)H, (13)C and (15)N assignments of a camelid nanobody directed against human alpha-synuclein" **Biomol NMR Assign**, 3, 231-233 (2009).
582. D.A. White, A.K. Buell, C.M. Dobson, M.E. Welland, and T.P. Knowles, "Biosensor-based label-free assays of amyloid growth" **FEBS Lett**, 583, 2587-2592 (2009).
583. K. Yanamandra, O. Alexeyev, V. Zamotin, V. Srivastava, A. Shchukarev, A. Brorsson, G.G. Tartaglia, T. Vogl, R. Kaye, G. Wingsle, J. Olsson, C.M. Dobson, A. Bergh, F. Elgh, and L.A. Morozova-Roche, "Amyloid formation by the pro-inflammatory S100A8/A9 proteins in the ageing prostate" **PLOS ONE**, 4, (2009).
584. J.J. Yerbury, J.R. Kumita, S. Meehan, C.M. Dobson, and M.R. Wilson, "alpha2-Macroglobulin and haptoglobin suppress amyloid formation by interacting with prefibrillar protein species" **J Biol Chem**, 284, 4246-4254 (2009).

## 2010

585. **Protein Misfolding Diseases** (ed. M. Ramirez-Alvarado, J.W. Kelly, and C.M. Dobson). Wiley. New Jersey, (2010).
586. M.J. Bayro, T. Maly, N.R. Birkett, C.E. Macphee, C.M. Dobson, and R.G. Griffin, "High-resolution MAS NMR analysis of PI3-SH3 amyloid fibrils: backbone conformation and implications for protofilament assembly and structure" **Biochemistry**, 49, 7474-7484 (2010).
587. C.R. Bodner, A.S. Maltsev, C.M. Dobson, and A. Bax, "Differential phospholipid binding of alpha-synuclein variants implicated in Parkinson's disease revealed by solution NMR spectroscopy" **Biochemistry**, 49, 862-871 (2010).

588. B. Bolognesi, J.R. Kumita, T.P. Barros, E.K. Esbjorner, L.M. Luheshi, D.C. Crowther, M.R. Wilson, C.M. Dobson, G. Favrin, and J.J. Yerbury, "ANS binding reveals common features of cytotoxic amyloid species" **ACS Chem Biol**, 5, 735-740 (2010).
589. A.C. Brorsson, B. Bolognesi, G.G. Tartaglia, S.L. Shammas, G. Favrin, I. Watson, D.A. Lomas, F. Chiti, M. Vendruscolo, C.M. Dobson, D.C. Crowther, and L.M. Luheshi, "Intrinsic determinants of neurotoxic aggregate formation by the amyloid beta peptide" **Biophys J**, 98, 1677-1684 (2010).
590. A.C. Brorsson, J.R. Kumita, I. MacLeod, B. Bolognesi, E. Speretta, L.M. Luheshi, T.P. Knowles, C.M. Dobson, and D.C. Crowther, "Methods and models in neurodegenerative and systemic protein aggregation diseases" **Front Biosci**, 15, 373-396 (2010).
591. A.K. Buell, J.R. Blundell, C.M. Dobson, M.E. Welland, E.M. Terentjev, and T.P.J. Knowles, "Frequency factors in a landscape model of filamentous protein aggregation" **Phys Rev Lett**, 104, 228101 (2010).
592. A.K. Buell, C.M. Dobson, T.P. Knowles, and M.E. Welland, "Interactions between amyloidophilic dyes and their relevance to studies of amyloid inhibitors" **Biophys J**, 99, 3492-3497 (2010).
593. A.K. Buell, D.A. White, C. Meier, M.E. Welland, T.P. Knowles, and C.M. Dobson, "Surface attachment of protein fibrils via covalent modification strategies" **J Phys Chem B**, 114, 10925-10938 (2010).
594. L.D. Cabrita, C.M. Dobson, and J. Christodoulou, "Protein folding on the ribosome" **Curr Opin Struct Biol**, 20, 33-45 (2010).
595. L.D. Cabrita, C.M. Dobson, and J. Christodoulou, "Early nascent chain folding events on the ribosome" **Isr J Chem**, 50, 99-108 (2010).
596. S. Campioni, B. Mannini, M. Zampagni, A. Pensalfini, C. Parrini, E. Evangelisti, A. Relini, M. Stefani, C.M. Dobson, C. Cecchi, and F. Chiti, "A causative link between the structure of aberrant protein oligomers and their toxicity" **Nat Chem Biol**, 6, 140-147 (2010).
597. M.A. Caporini, V.S. Bajaj, M. Veshtort, A. Fitzpatrick, C.E. MacPhee, M. Vendruscolo, C.M. Dobson, and R.G. Griffin, "Accurate determination of interstrand distances and alignment in amyloid fibrils by magic angle spinning NMR" **J Phys Chem B**, 114, 13555-13561 (2010).
598. N. Carulla, M. Zhou, E. Giralt, C.V. Robinson, and C.M. Dobson, "Structure and intermolecular dynamics of aggregates populated during amyloid fibril formation studied by hydrogen/deuterium exchange" **Acc Chem Res**, 43, 1072-1079 (2010).
599. E.J. De Genst, T. Guilliams, J. Wellens, E.M. O'Day, C.A. Waudby, S. Meehan, M. Dumoulin, S.T. Hsu, N. Cremades, K.H. Verschueren, E. Pardon, L. Wyns, J. Steyaert, J. Christodoulou, and C.M. Dobson, "Structure and properties of a complex of  $\alpha$ -synuclein and a single-domain camelid antibody" **J Mol Biol**, 402, 326-343 (2010).

600. A. Dhulesia, N. Cremades, J.R. Kumita, S.T. Hsu, M.F. Mossuto, M. Dumoulin, D. Nietlispach, M. Akke, X. Salvatella, and C.M. Dobson, "Local cooperativity in an amyloidogenic state of human lysozyme observed at atomic resolution" **J Am Chem Soc**, 132, 15580-15588 (2010).
601. C.L. Hagan, R.J. Johnson, A. Dhulesia, M. Dumoulin, J. Dumont, E. De Genst, J. Christodoulou, C.V. Robinson, C.M. Dobson, and J.R. Kumita, "A non-natural variant of human lysozyme (I59T) mimics the in vitro behaviour of the I56T variant that is responsible for a form of familial amyloidosis" **Protein Eng Des Sel**, 23, 499-506 (2010).
602. S.T. Hsu, G. Blaser, C. Behrens, L.D. Cabrita, C.M. Dobson, and S.E. Jackson, "Folding study of venus reveals a strong ion dependence of its yellow fluorescence under mildly acidic conditions" **J Biol Chem**, 285, 4859-4869 (2010).
603. C. Lendel, B. Bolognesi, A. Wahlström, C.M. Dobson, and A. Gräslund, "Detergent-like interaction of Congo red with the amyloid beta peptide" **Biochemistry**, 49, 1358-1360 (2010).
604. L.M. Luheshi, W. Hoyer, T.P. de Barros, I. van Dijk Härd, A.C. Brorsson, B. Macao, C. Persson, D.C. Crowther, D.A. Lomas, S. Ståhl, C.M. Dobson, and T. Härd, "Sequestration of the Aβ peptide prevents toxicity and promotes degradation in vivo" **PLoS Biol**, 8, e1000334 (2010).
605. M.F. Mossuto, A. Dhulesia, G. Devlin, E. Frare, J.R. Kumita, P.P. de Laureto, M. Dumoulin, A. Fontana, C.M. Dobson, and X. Salvatella, "The non-core regions of human lysozyme amyloid fibrils influence cytotoxicity" **J Mol Biol**, 402, 783-796 (2010).
606. E.P. O'Brien, S.T. Hsu, J. Christodoulou, M. Vendruscolo, and C.M. Dobson, "Transient tertiary structure formation within the ribosome exit port" **J Am Chem Soc**, 132, 16928-16937 (2010).
607. C. Roodveldt, A. Labrador-Garrido, E. Gonzalez-Rey, R. Fernandez-Montesinos, M. Caro, C.C. Lachaud, C.A. Waudby, M. Delgado, C.M. Dobson, and D. Pozo, "Glial innate immunity generated by non-aggregated alpha-synuclein in mouse: Differences between wild-type and Parkinson's disease-linked mutants" **PLoS One**, 5, e13481 (2010).
608. A. Sandberg, L.M. Luheshi, S. Sollvander, T.P. de Barros, B. Macao, T.P.J. Knowles, H. Biverstal, C. Lendel, F. Ekholm-Petterson, A. Dubnovitsky, L. Lannfelt, C.M. Dobson, and T. Hard, "Stabilization of neurotoxic Alzheimer amyloid-beta oligomers by protein engineering" **Proc Natl Acad Sci USA**, 107, 15595-15600 (2010).
609. G.G. Tartaglia, C.M. Dobson, F.U. Hartl, and M. Vendruscolo, "Physicochemical determinants of chaperone requirements" **J Mol Biol**, 400, 579-588 (2010).
610. T.J. van Ham, A. Esposito, J.R. Kumita, S.T. Hsu, G.S. Kaminski Schierle, C.F. Kaminski, C.M. Dobson, E.A. Nollen, and C.W. Bertoncini, "Towards multiparametric fluorescent imaging of amyloid formation: studies of a YFP model of alpha-synuclein aggregation" **J Mol Biol**, 395, 627-642 (2010).



611. C.A. Waudby, T.P. Knowles, G.L. Devlin, J.N. Skepper, H. Ecroyd, J.A. Carver, M.E. Welland, J. Christodoulou, C.M. Dobson, and S. Meehan, "The interaction of alphaB-crystallin with mature alpha-synuclein amyloid fibrils inhibits their elongation" **Biophys J**, 98, 843-851 (2010).
612. D.A. White, A.K. Buell, T.P. Knowles, M.E. Welland, and C.M. Dobson, "Protein aggregation in crowded environments" **J Am Chem Soc**, 132, 5170-5175 (2010).

## 2011

613. A.J. Baldwin, T.P. Knowles, G. Tartaglia, A. Fitzpatrick, G. Devlin, S. Shamma, C.A. Waudby, M.F. Mossuto, S.L. Gras, J. Christodoulou, S.J. Anthony-Cahill, P.D. Barker, M. Vendruscolo, and C.M. Dobson, "Metastability of native proteins and the phenomenon of amyloid formation" **J Am Chem Soc**, 133, 14160-14163 (2011).
614. M.J. Bayro, G.T. Debelouchina, M.T. Eddy, N.R. Birkett, C.E. Macphee, M.M. Rosay, W.E. Maas, C.M. Dobson, and R.G. Griffin, "Intermolecular structure determination of amyloid fibrils with magic-angle spinning and dynamic nuclear polarization NMR" **J Am Chem Soc**, 133, 13967-13974 (2011).
615. A.K. Buell, A. Dhulesia, M.F. Mossuto, N. Cremades, J.R. Kumita, M. Dumoulin, M.E. Welland, T.P. Knowles, X. Salvatella, and C.M. Dobson, "Population of nonnative states of lysozyme variants drives amyloid fibril formation" **J Am Chem Soc**, 133, 7737-7743 (2011).
616. A.K. Buell, E.K. Esbjörner, P.J. Riss, D.A. White, F.I. Aigbirhio, G. Toth, M.E. Welland, C.M. Dobson, and T.P. Knowles, "Probing small molecule binding to amyloid fibrils" **Phys Chem Chem Phys**, 13, 20044-20052 (2011).
617. L.D. Cabrita, C.A. Waudby, C.M. Dobson, and J. Christodoulou, "Solution-state nuclear magnetic resonance spectroscopy and protein folding" **Methods Mol Biol**, 752, 97-120 (2011).
618. S.I. Cohen, M. Vendruscolo, C.M. Dobson, and T.P. Knowles, "Nucleated polymerisation in the presence of pre-formed seed filaments" **Int J Mol Sci**, 12, 5844-5852 (2011).
619. S.I. Cohen, M. Vendruscolo, M.E. Welland, C.M. Dobson, E.M. Terentjev, and T.P. Knowles, "Nucleated polymerization with secondary pathways. I. Time evolution of the principal moments" **J Chem Phys**, 135, 065105 (2011).
620. S.I. Cohen, M. Vendruscolo, C.M. Dobson, and T.P. Knowles, "Nucleated polymerization with secondary pathways. II. Determination of self-consistent solutions to growth processes described by non-linear master equations" **J Chem Phys**, 135, 065106 (2011).
621. S.I. Cohen, M. Vendruscolo, C.M. Dobson, and T.P. Knowles, "Nucleated polymerization with secondary pathways. III. Equilibrium behavior and oligomer populations" **J Chem Phys**, 135, 065107 (2011).
622. A. De Simone, A. Dhulesia, G. Soldi, M. Vendruscolo, S.T. Hsu, F. Chiti, and C.M. Dobson, "Experimental free energy surfaces reveal the mechanisms of

- maintenance of protein solubility" **Proc Natl Acad Sci USA**, 108, 21057-21062 (2011).
623. A.W. Fitzpatrick, T.P. Knowles, C.A. Waudby, M. Vendruscolo, and C.M. Dobson, "Inversion of the balance between hydrophobic and hydrogen bonding interactions in protein folding and aggregation" **PLoS Comput Biol**, 7, e1002169 (2011).
624. T.R. Jahn, K.J. Kohlhoff, M. Scott, G.G. Tartaglia, D.A. Lomas, C.M. Dobson, M. Vendruscolo, and D.C. Crowther, "Detection of early locomotor abnormalities in a *Drosophila* model of Alzheimer's disease" **J Neurosci Methods**, 197, 186-189 (2011).
625. Y.O. Kamatari, L.J. Smith, C.M. Dobson, and K. Akasaka, "Cavity hydration as a gateway to unfolding: An NMR study of hen lysozyme at high pressure and low temperature" **Biophys Chem**, 156, 24-30 (2011).
626. G.S. Kaminski Schierle, C.W. Bertocini, F.T. Chan, A.T. van der Goot, S. Schwedler, J. Skepper, S. Schlachter, T. van Ham, A. Esposito, J.R. Kumita, E.A. Nollen, C.M. Dobson, and C.F. Kaminski, "A FRET sensor for non-invasive imaging of amyloid formation in vivo" **Chemphyschem**, 12, 673-680 (2011).
627. G.S. Kaminski Schierle, S. van de Linde, M. Erdelyi, E.K. Esbjörner, T. Klein, E. Rees, C.W. Bertocini, C.M. Dobson, M. Sauer, and C.F. Kaminski, "In situ measurements of the formation and morphology of intracellular  $\beta$ -amyloid fibrils by super-resolution fluorescence imaging" **J Am Chem Soc**, 133, 12902-12905 (2011).
628. T.P. Knowles, G.L. Devlin, C.M. Dobson, and M.E. Welland, "Probing protein aggregation with quartz crystal microbalances" **Methods Mol Biol**, 752, 137-145 (2011).
629. T.P. Knowles, D.A. White, A.R. Abate, J.J. Agresti, S.I. Cohen, R.A. Sperling, E.J. De Genst, C.M. Dobson, and D.A. Weitz, "Observation of spatial propagation of amyloid assembly from single nuclei" **Proc Natl Acad Sci U S A**, 108, 14746-14751 (2011).
630. K.J. Kohlhoff, T.R. Jahn, D.A. Lomas, C.M. Dobson, D.C. Crowther, and M. Vendruscolo, "The iFly tracking system for an automated locomotor and behavioural analysis of *Drosophila melanogaster*" **Integr Biol**, 3, 755-760 (2011).
631. K. Levitan, D. Chereau, S.I. Cohen, T.P. Knowles, C.M. Dobson, A.L. Fink, J.P. Anderson, J.M. Goldstein, and G.L. Millhauser, "Conserved C-terminal charge exerts a profound influence on the aggregation rate of  $\alpha$ -synuclein" **J Mol Biol**, 411, 329-333 (2011).
632. M.F. Mossuto, B. Bolognesi, B. Guixer, A. Dhulesia, F. Agostini, J.R. Kumita, G.G. Tartaglia, M. Dumoulin, C.M. Dobson, and X. Salvatella, "Disulfide bonds reduce the toxicity of the amyloid fibrils formed by an extracellular protein" **Angew Chem Int Ed Engl**, 50, 7048-7051 (2011).
633. E.P. O'Brien, J. Christodoulou, M. Vendruscolo, and C.M. Dobson, "New scenarios of protein folding can occur on the ribosome" **J Am Chem Soc**, 133, 513-526 (2011).

634. S. Raimondi, F. Guglielmi, S. Giorgetti, S.D. Gaetano, A. Arciello, D.M. Monti, A. Relini, D. Nichino, S.M. Doglia, A. Natalello, P. Pucci, P. Mangione, L. Obici, G. Merlini, M. Stoppini, P. Robustelli, G.G. Tartaglia, M. Vendruscolo, C.M. Dobson, R. Piccoli, and V. Bellotti, "Effects of the known pathogenic mutations on the aggregation pathway of the amyloidogenic peptide of apolipoprotein A-I" **J Mol Biol**, 407, 465-476 (2011).
635. S.L. Shammass, T.P. Knowles, A.J. Baldwin, C.E. Macphee, M.E. Welland, C.M. Dobson, and G.L. Devlin, "Perturbation of the stability of amyloid fibrils through alteration of electrostatic interactions" **Biophys J**, 100, 2783-2791 (2011).
636. M. Vendruscolo and C.M. Dobson, "Protein dynamics: Moore's law in molecular biology" **Curr Biol**, 21, R68-R70 (2011).
637. M. Vendruscolo, T.P. Knowles, and C.M. Dobson, "Protein solubility and protein homeostasis: A generic view of protein misfolding disorders" **Cold Spring Harb Perspect Biol**, 3, a010454 (2011).
638. Y.Q. Wang, A.K. Buell, X.Y. Wang, M.E. Welland, C.M. Dobson, T.P. Knowles, and S. Perrett, "Relationship between prion propensity and the rates of individual molecular steps of fibril assembly" **J Biol Chem**, 286, 12101-12107 (2011).
639. G. Whyteside, M.J. Alcocer, J.R. Kumita, C.M. Dobson, M. Lazarou, R.J. Pleass, and D.B. Archer, "Native-state stability determines the extent of degradation relative to secretion of protein variants from *Pichia pastoris*" **PLoS One**, 6, e22692 (2011).
640. A.R. Wyatt, J.J. Yerbury, P. Berghofer, I. Greguric, A. Katsifis, C.M. Dobson, and M.R. Wilson, "Clusterin facilitates in vivo clearance of extracellular misfolded proteins" **Cell Mol Life Sci**, 68, 3919-3931 (2011).

## 2012

641. A. Abelein, B. Bolognesi, C.M. Dobson, A. Gräslund and C. Lendel, "Hydrophobicity and conformational change as mechanistic determinants for nonspecific modulators of amyloid  $\beta$  self-assembly" **Biochemistry**, 51, 126-137 (2012).
642. M. Ahn, E. De Genst, G.S. Kaminski Schierle, M. Erdelyi, C.F. Kaminski, C.M. Dobson and J. R. Kumita, "Analysis of the native structure, stability and aggregation of biotinylated human lysozyme" **PLoS One**, 7, e50192 (2012).
643. F. Bemporad, A. De Simone, F. Chiti and C.M. Dobson, "Characterizing intermolecular interactions that initiate native-like protein aggregation" **Biophys J**, 102, 2595-2604 (2012).
644. A.K. Buell, A. Dhulesia, D.A. White, T.P. Knowles, C.M. Dobson and M.E. Welland, "Detailed analysis of the energy barriers for amyloid fibril growth" **Angew Chem Int Ed Engl**, 51, 5247-5251 (2012).
645. A.K. Buell, C.M. Dobson and M.E. Welland, "Measuring the kinetics of amyloid fibril elongation using quartz crystal microbalances" **Methods Mol Biol**, 849, 101-119 (2012).

646. S.I. Cohen, M. Vendruscolo, C.M. Dobson and T.P. Knowles, "From macroscopic measurements to microscopic mechanisms of protein aggregation" **J Mol Biol**, 41, 160-171 (2012).
647. N. Cremades, S.I. Cohen, E. Deas, A.Y. Abramov, A.Y. Chen, A. Orte, M. Sandal, R.W. Clarke, P. Dunne, F.A. Aprile, C.W. Bertocini, N.W. Wood, T.P. Knowles, C.M. Dobson and D. Klenerman, "Direct observation of the interconversion of normal and toxic forms of  $\alpha$ -synuclein" **Cell**, 149, 1048-1059 (2012).
648. E. De Genst and C.M. Dobson, "Nanobodies as structural probes of protein misfolding and fibril formation" **Methods Mol Biol**, 911, 533-558 (2012).
649. A. De Simone, C. Kitchen, A.H. Kwan, M. Sunde, C.M. Dobson and D. Frenkel, "Intrinsic disorder modulates protein self-assembly and aggregation" **Proc Natl Acad Sci USA**, 109, 6951-6956 (2012).
650. E. Evangelisti, C. Cecchi, R. Cascella, C. Sgromo, M. Becatti, C.M. Dobson, F. Chiti and M. Stefani, "Membrane lipid composition and its physicochemical properties define cell vulnerability to aberrant protein oligomers" **J Cell Sci**, 125, 2416-2427 (2012).
651. G. Fusco, A. De Simone, S.T. Hsu, F. Bemporad, M. Vendruscolo, F. Chiti and C.M. Dobson, " $^1\text{H}$ ,  $^{13}\text{C}$  and  $^{15}\text{N}$  resonance assignments of human muscle acylphosphatase" **Biomol NMR Assign**, 6, 27-29 (2012).
652. J.M. Gregory, T.P. Barros, S. Meehan, C.M. Dobson and L.M. Luheshi, "The aggregation and neurotoxicity of TDP-43 and its ALS-associated 25 kDa fragment are differentially affected by molecular chaperones in *Drosophila*" **PLoS One**, 7, e31899 (2012).
653. T.P.J. Knowles, A. De Simone, A.W. Fitzpatrick, A. Baldwin, S. Meehan, L. Rajah, M. Vendruscolo, M.E. Welland, C.M. Dobson and E. M. Terentjev, "Twisting transition between crystalline and fibrillar phases of aggregated peptides" **Phys Rev Lett**, 109, 158101 (2012).
654. J.R. Kumita, L. Helmfors, J. Williams, L.M. Luheshi, L. Menzer, M. Dumoulin, D.A. Lomas, D.C. Crowther, C.M. Dobson and A.C. Brorsson, "Disease-related amyloidogenic variants of human lysozyme trigger the unfolded protein response and disturb eye development in *Drosophila melanogaster*" **FASEB J**, 26, 192-202 (2012).
655. N. Lorenzen, S.I.A. Cohen, S.B. Nielsen, T.W. Herling, G. Christiansen, C.M. Dobson, T.P.J. Knowles and D. Otzen, "Role of elongation and secondary pathways in S6 amyloid fibril growth" **Biophys J**, 102, 2167-2175 (2012).
656. B. Mannini, R. Cascella, M. Zampagni, M. van Waarde-Verhagen, S. Meehan, C. Roodveldt, S. Campioni, M. Boninsegna, A. Penco, A. Relini, H.H. Kampinga, C.M. Dobson, M.R. Wilson, C. Cecchi and F. Chiti, "Molecular mechanisms used by chaperones to reduce the toxicity of aberrant protein oligomers" **Proc Natl Acad Sci USA**, 109, 12479-12484 (2012).
657. E.K. McGuire, M. Motskin, B. Bolognesi, S.D. Bergin, T.P. Knowles, J. Skepper, L.M. Luheshi, D.W. McComb, C.M. Dobson and A.E. Porter, "Selenium-

- enhanced electron microscopic imaging of different aggregate forms of a segment of the amyloid  $\beta$  peptide in cells" **ACS Nano**, 6, 4760-4767 (2012).
658. P. Narayan, S. Meehan, J. A. Carver, M. R. Wilson, C. M. Dobson and D. Klenerman, "Amyloid- $\beta$  oligomers are sequestered by both intracellular and extracellular chaperones" **Biochemistry**, 51, 9270-9276 (2012).
659. P. Narayan, A. Orte, R.W. Clarke, B. Bolognesi, S. Hook, K.A. Ganzinger, S. Meehan, M.R. Wilson, C.M. Dobson and D. Klenerman, "The extracellular chaperone clusterin sequesters oligomeric forms of the amyloid- $\beta$ (1-40) peptide" **Nature Struct Mol Biol**, 19, 79-83 (2012).
660. E.P. O'Brien, J. Christodoulou, M. Vendruscolo and C.M. Dobson, "Trigger factor slows co-translational folding through kinetic trapping while sterically protecting the nascent chain from aberrant cytosolic interactions" **J Am Chem Soc**, 134, 10920-10932 (2012).
661. E.P. O'Brien, M. Vendruscolo and C.M. Dobson, "Prediction of variable translation rate effects on cotranslational protein folding" **Nature Commun**, 3, 868 (2012).
662. C. Roodveldt, A. Andersson, E. J. De Genst, A. Labrador-Garrido, A. K. Buell, C. M. Dobson, G. G. Tartaglia and M. Vendruscolo, "A rationally designed six-residue swap generates comparability in the aggregation behavior of  $\alpha$ -synuclein and  $\beta$ -synuclein" **Biochemistry**, 51, 8771-8778 (2012).
663. E. Speretta, T.R. Jahn, G.G. Tartaglia, G. Favrin, T.P. Barros, S. Imarisio, D.A. Lomas, L.M. Luheshi, D.C. Crowther and C.M. Dobson, "Expression in *Drosophila* of tandem amyloid  $\beta$  peptides provides insights into links between aggregation and neurotoxicity" **J Biol Chem**, 287, 20748-20754 (2012).
664. C.A. Waudby, M.D. Mantle, L.D. Cabrita, L.F. Gladden, C.M. Dobson and J. Christodoulou, "Rapid distinction of intracellular and extracellular proteins using NMR diffusion measurements" **J Am Chem Soc**, 134, 11312-11315 (2012).

## 2013

665. F.A. Aprile, A. Dhulesia, F. Stengel, C. Roodveldt, J.L.P. Benesch, P. Tortora, C.V. Robinson, X. Salvatella, C.M. Dobson and N. Cremades, "Hsp70 oligomerization is mediated by an interaction between the interdomain linker and the substrate-binding domain" **PLoS One**, 8, e67961 (2013).
666. A.K. Buell, P. Hung, X. Salvatella, M.E. Welland, C.M. Dobson and T.P. Knowles, "Electrostatic effects in filamentous protein aggregation" **Biophys J**, 104, 1116-1126 (2013).
667. F.T. Chan, G.S. Kaminski Schierle, J.R. Kumita, C.W. Bertoncini, C.M. Dobson and C.F. Kaminski, "Protein amyloids develop an intrinsic fluorescence signature during aggregation" **Analyst**, 138, 2156-2162 (2013).
668. P. Ciryam, R.I. Morimoto, M. Vendruscolo, C.M. Dobson and E.P. O'Brien, "In vivo translation rates can substantially delay the cotranslational folding of the *Escherichia coli* cytosolic proteome" **Proc Natl Acad Sci USA**, 110, E132-E140 (2013).

669. P. Ciryam, G.G. Tartaglia, R.I. Morimoto, C.M. Dobson and M. Vendruscolo, "Widespread aggregation and neurodegenerative diseases are associated with supersaturated proteins" **Cell Rep**, 14, 781-790 (2013).
670. S.I. Cohen, S. Linse, L.M. Luheshi, E. Hellstrand, D.A. White, L. Rajah, D.E. Otzen, M. Vendruscolo, C.M. Dobson and T.P. Knowles, "Proliferation of amyloid- $\beta$ 42 aggregates occurs through a secondary nucleation mechanism" **Proc Natl Acad Sci USA**, 110, 9758-9763 (2013).
671. S.I. Cohen, M. Vendruscolo, C.M. Dobson and T.P.J. Knowles, "The kinetics and mechanisms of amyloid formation", in **Amyloid Fibrils and Prefibrillar Aggregates** (ed. D. Otzen). Wiley-VCH, p. 183-210 (2013).
672. G.T. Debelouchina, M.J. Bayro, A.W. Fitzpatrick, V. Ladizhansky, M.T. Colvin, M.A. Caporini, C.P. Jaroniec, V.S. Bajaj, M.M. Rosay, C.E. MacPhee, M. Vendruscolo, W.E. Maas, C.M. Dobson and R.G. Griffin, "Higher order amyloid fibril structure by MAS NMR and DNP spectroscopy" **J Am Chem Soc**, 135, 19237-19247 (2013).
673. E.J. de Genst, P.H. Chan, E. Pardon, S.T. Hsu, J.R. Kumita, J. Christodoulou, L. Menzer, D.Y. Chirgadze, C.V. Robinson, S. Muyldermans, A. Matagne, L. Wyns, C.M. Dobson and M. Dumoulin, "A nanobody binding to non-amyloidogenic regions of the protein human lysozyme enhances partial unfolding but inhibits amyloid fibril formation" **J Phys Chem B**, 117, 13245-13258 (2013).
674. A. De Simone, R.W. Montalvao, C.M. Dobson and M. Vendruscolo, "Characterisation of the interdomain motions in hen lysozyme using residual dipolar couplings as replica-averaged structural restraints in molecular dynamics simulations" **Biochemistry**, 52, 6480-6486 (2013).
675. C.M. Dobson, "The amyloid phenomenon and its significance" in **Amyloid Fibrils and Prefibrillar Aggregates** (ed. D. Otzen). Wiley-VCH, p. 1-19 (2013).
676. A.W. Fitzpatrick, G.T. Debelouchina, M.J. Bayro, D.K. Clare, M.A. Caporini, V.S. Bajaj, C.P. Jaroniec, L. Wang, V. Ladizhansky, S.A. Müller, C.E. MacPhee, C.A. Waudby, H.R. Mott, A. De Simone, T.P. Knowles, H.R. Saibil, M. Vendruscolo, E.V. Orlova, R.G. Griffin and C.M. Dobson, "Atomic structure and hierarchical assembly of a cross- $\beta$  amyloid fibril" **Proc Natl Acad Sci USA**, 110, 5468-5473 (2013).
677. T. Williams, F. El-Turk, A.K. Buell, E.M. O'Day, F.A. Aprile, E.K. Esbjörner, M. Vendruscolo, N. Cremades, E. Pardon, L. Wyns, M.E. Welland, J. Steyaert, J. Christodoulou, C.M. Dobson and E. De Genst, "Nanobodies raised against monomeric  $\alpha$ -synuclein distinguish between fibrils at different maturation stages" **J Mol Biol**, 425, 2397-2411 (2013).
678. P. Narayan, K.A. Ganzinger, J. McColl, L. Weimann, S. Meehan, S. Qamar, J.A. Carver, M.R. Wilson, P. St George-Hyslop, C.M. Dobson and D. Klenerman, "Single molecule characterization of the interactions between amyloid- $\beta$  peptides and the membranes of hippocampal cells" **J Am Chem Soc**, 135, 1491-1498 (2013).
679. M. M. Ouberai, J. Wang, M.J. Swann, C. Galvagnion, T. Williams, C.M. Dobson and M.E. Welland, " $\alpha$ -synuclein senses lipid packing defects and induces lateral

- expansion of lipids leading to membrane remodeling" **J Biol Chem**, 288, 20883-20895 (2013).
680. D. Pinotsi, A.K. Buell, C.M. Dobson, G.S. Kaminski Schierle and C.F. Kaminski, "A label-free, quantitative assay of amyloid fibril growth based on intrinsic fluorescence" **ChemBiochem**, 14, 846-850 (2013).
681. D. Pinotsi, A.K. Büll, C. Galvagnion, C.M. Dobson, G.S. Kaminski Schierle and C.F. Kaminski, "Direct observation of heterogeneous amyloid fibril growth kinetics via two-color super-resolution microscopy" **Nano Lett**, 14, 339-345 (2013).
682. C. Roodveldt, A. Labrador-Garrido, E. Gonzalez-Rey, C.C. Lachaud, T. Williams, R. Fernandez-Montesinos, A. Benitez-Rondan, G. Robledo, A. Hmadcha, M. Delgado, C.M. Dobson and D. Pozo, "Preconditioning of microglia by  $\alpha$ -synuclein strongly affects the response induced by Toll-like receptor (TLR) stimulation" **PLoS One** 8, e79160 (2013).
683. M. Vendruscolo and C.M. Dobson, "Structural biology: Protein self-assembly intermediates" **Nat Chem Biol**, 9, 216-217 (2013).
684. L.R. Volpatti, M. Vendruscolo, C.M. Dobson and T.P. Knowles, "A clear view of polymorphism, twist, and chirality in amyloid fibril formation" **ACS Nano**, 7, 10443-10448 (2013).
685. C.A. Waudby, C. Camilloni, A.W. Fitzpatrick, L.D. Cabrita, C.M. Dobson, M. Vendruscolo and J. Christodoulou, "In-cell NMR characterization of the secondary structure populations of a disordered conformation of  $\alpha$ -synuclein within *E. coli* cells" **PLoS One**, 8, e72286 (2013).
686. A.R. Wyatt, P. Constantinescu, H. Ecroyd, C.M. Dobson, M.R. Wilson, J.R. Kumita and J.J. Yerbury, "Protease-activated alpha-2-macroglobulin can inhibit amyloid formation via two distinct mechanisms" **FEBS Lett**, 587, 398-403 (2013).
687. L.Q. Xu, S. Wu, A.K. Buell, S.I.A. Cohen, L.J. Chen, W.H. Hu, S.A. Cusack, L.S. Itzhaki, H. Zhang, T.P.J. Knowles, C.M. Dobson, M.E. Welland, G.W. Jones and S. Perrett, "Influence of specific HSP70 domains on fibril formation of the yeast prion protein Ure2" **Phil Trans R Soc B**, 368, 1-13 (2013).
688. M. Zhu, A. De Simone, D. Schenk, G. Toth, C.M. Dobson and M. Vendruscolo, "Identification of small-molecule binding pockets in the soluble monomeric form of the A $\beta$ 42 peptide" **J Chem Phys**, 139, 035101 (2013).

## 2014

689. S. Abeln, M. Vendruscolo, C.M. Dobson and D. Frenkel, "A simple lattice model that captures protein folding, aggregation and amyloid formation" **PLoS One**, 9, e85185 (2014).
690. J.R. Allison, R.C. Rivers, J.C. Christodoulou, M. Vendruscolo and C.M. Dobson, "A relationship between the transient structure in the monomeric state and the aggregation propensities of  $\alpha$ -synuclein and  $\beta$ -synuclein" **Biochemistry**, 53, 7170-7183 (2014).
691. P. Arioso, M. Vendruscolo, C.M. Dobson and T.P. Knowles, "Chemical kinetics

- for drug discovery to combat protein aggregation diseases" **Trends Pharmacol Sci**, 35, 127-135 (2014).
692. B. Bolognesi, S.I. Cohen, P. Aran Terol, E.K. Esbjörner, S. Giorgetti, M.F. Mossuto, A. Natalello, A.C. Brorsson, T.P. Knowles, C.M. Dobson, and L.M. Luheshi, "Single point mutations induce a switch in the molecular mechanism of the aggregation of the Alzheimer's disease associated A $\beta$ 42 peptide" **ACS Chem Biol**, 9, 378-82 (2014).
  693. A.K. Buell, C.M. Dobson and T.P. Knowles, "The physical chemistry of the amyloid phenomenon: thermodynamics and kinetics of filamentous protein aggregation" **Essays Biochem**, 56, 11-39 (2014).
  694. A.K. Buell, C. Galvagnion, R. Gasper, E. Sparr, M. Vendruscolo, T.P. Knowles, S. Lines, and C.M. Dobson, "Solution conditions determine the relative importance of nucleation and growth processes in  $\alpha$ -synuclein aggregation" **Proc Natl Acad Sci USA**, 111, 7671-7676 (2014).
  695. S.I. Cohen, L. Rajah, C.H. Yoon, A.K. Buell, D.A. White, R.A. Sperling, M. Vendruscolo, E.M. Terentjev, C.M. Dobson, D.A. Weitz, and T.P. Knowles, "Spatial propagation of protein polymerization" **Phys Rev Lett**, 112, 098101 (2014).
  696. E. De Genst, A. Messer and C.M. Dobson, "Antibodies and protein misfolding: From structural research tools to therapeutic strategies" **Biochim Biophys Acta**, 11, 1907-1919 (2014).
  697. C.M. Dobson, "Dynamics and timekeeping in biological systems" **Annu Rev Biochem**, 83, 159-164 (2014).
  698. E.K. Esbjörner, F. Chan, E. Rees, M. Erdelyi, L.M. Luheshi, C.W. Bertoncini, C.F. Kaminski, C.M. Dobson and G.S. Kaminski Schierle, "Direct observations of amyloid  $\beta$  self-assembly in live cells provide insights into differences in the kinetics of A $\beta$ (1-40) and A $\beta$ (1-42) aggregation" **Chem Biol**, 21, 1-11 (2014).
  699. G. Fusco, A. De Simone, T. Gopinath, V. Vostrikov, M. Vendruscolo, C.M. Dobson and G. Veglia, "Direct observation of the three regions in  $\alpha$ -synuclein that determine its membrane-bound behaviour" **Nat Commun**, 5, 3827 (2014).
  700. G.A. Garcia, S.I. Cohen, C.M. Dobson, and T.P. Knowles, "Nucleation-conversion-polymerization reactions of biological macromolecules with prenucleation clusters" **Phys Rev E**, 89, 032712 (2014).
  701. K.A. Gazinger, P. Narayan, S.S. Qamar, L. Weimann, R.T. Ranasinghe, A. Aguzzi, C.M. Dobson, J. McColl, P. St George-Hyslop and D. Klenerman, "Single-molecule imaging reveals that small amyloid- $\beta$ 1-42 oligomers interact with the cellular prion protein (PrP(C))" **ChemBiochem**, 15, 2515-21 (2014).
  702. T.P. Knowles, M. Vendruscolo and C.M. Dobson, "The amyloid state and its association with protein misfolding diseases" **Nat Rev Mol Cell Biol**, 15, 384-396 (2014).
  703. A. Labrador Garrido, M. Cejudo Guillén, R. Klippstein, E.J. De Genst, L. Tomas Gallardo, M.M. Leal, J. Villadiego, J.J. Toledo Aral, C.M. Dobson, D. Pozo and C. Roodveldt, "Chaperoned amyloid proteins for immune manipulation:  $\alpha$ -



- Synuclein/Hsp70 shifts immunity toward a modulatory phenotype" **Immun Inflamm Dis**, 2, 226-38 (2014).
704. A. Levin, T.O. Mason, L. Adler-Abramovich, A.K. Buell, G. Meisl, C. Galvagnion, Y. Bram, S.A. Stratford, C.M. Dobson, T.P. Knowles and E. Grazit, "Ostwald's rule of stages governs structural transitions and morphology of dipeptide supramolecular polymers" **Nat Commun**, 5, 5129 (2014).
705. N. Lorenzen, S.B Nielsen, A.K Buell, J.D Kaspersen, P. Arosio, B.S Vad, W Paslawski, G. Christiansen, Z. Valnickova-Hansen, M. Andreasen, J.J Enghild, J.S Pedersen, C.M Dobson, T.P. Knowles and D.E. Otzen, "The role of stable  $\alpha$ -synuclein oligomers in the molecular events underlying amyloid formation" **J Am Chem Soc**, 136, 3859-3868 (2014).
706. B. Mannini, E. Mulvihill, C. Sgromo, R. Cascella, R. Khodarahmi, M. Ramazzotti, C.M. Dobson, C. Cecchi and F. Chiti, "Toxicity of protein oligomers is rationalized by a function combining size and surface hydrophobicity" **ACS Chem Biol**, 9, 2309-2317 (2014).
707. C. Mansson, P. Arosio, R. Hussein, H.H. Kaminga, R.M. Hashem, W.C. Boelens, C.M. Dobson, T.P. Knowles, S. Linse and C. Emanuelsson "Interaction of the molecular chaperone DNAJB6 with growing amyloid-beta 42 ( $A\beta$ 42) aggregates leads to sub-stoichiometric inhibition of amyloid formation" **J Biol Chem**, 289, 31066-31076 (2014).
708. G. Meisl, X. Yang, E. Hellstrand, B. Frohm, J.B. Kirkegaard, S.I. Cohen, C.M. Dobson, S. Linse and T.P. Knowles, "Differences in nucleation behavior underlie the contrasting aggregation kinetics of the  $A\beta$ 40 and  $A\beta$ 42 peptides" **Proc Natl Acad Sci USA**, 111, 9384-9389 (2014).
709. P. Narayan, K.M. Holmström, D.H. Kim, D.J. Whitcomb, M.R. Wilson, P. St George-Hyslop, N.W. Wood, C.M. Dobson, K. Cho, A.Y. Abramov, and D. Klenerman, "Rare individual amyloid- $\beta$  oligomers act on astrocytes to initiate neuronal damage" **Biochemistry**, 53, 2442-53 (2014).
710. E.P. O'Brien, M. Vendruscolo and C.M. Dobson, "Kinetic modelling indicates that fast-translating codons can coordinate contranslational protein folding by avoiding misfolded intermediates" **Nat Commun**, 5, 2988 (2014).
711. E.P. O'Brien, P. Ciryam, M. Vendruscolo and C.M. Dobson, "Understanding the influence of codon translation rates on cotranslational protein folding" **Acc Chem Res**, 47, 1536-44 (2014).
712. G. Tóth, S.J. Gardai, W. Zago, C.W. Bertoncini, N. Cremades, S.L. Roy, M.A. Tambe, J.C. Rochet, C. Galvagnion, G. Skibinski, S. Finkbeiner, M. Bova, K. Regnstrom, S.S Chiou, J. Johnston, K. Callaway, J.P. Anderson, M.F. Jobling, A.K. Buell AK, T.A. Yednock, T.P. Knowles, M. Vendruscolo, J. Christodoulou, C.M. Dobson and D. Schenk, L. McConlogue, "Targeting the intrinsically disordered structural ensemble of  $\alpha$ -synuclein by small molecules as a potential therapeutic strategy for Parkinson's disease" **PLoS One**, 9, e87133 (2014).
713. J. Wacker, R. Röncke, M. Westermann, M. Wulff, K.G. Reymann, C.M. Dobson, U. Horn, D.C. Crowther, L.M. Luheshi and M. Fändrich, "Oligomer-targeting with a conformational antibody fragment promotes toxicity in A $\beta$ -expressing flies" **Acta Neuropathol Commun**, 2, 43 (2014).

714. A.R. Wyatt, J.R. Kumita, R.W. Misfud, C.A. Gooden, M.R. Wilson and C.M. Dobson, "Hypochlorite-induced structural modifications enhance the chaperone activity of human  $\alpha$ 2-macroglobulin" **Proc Natl Acad Sci USA**, 111, E2081-90 (2014).

## 2015

715. A.J. Baldwin, D.L. Egan, F.J. Warren, P.D. Barker, C.M. Dobson, P.J. Butterworth and P.R. Ellis, "Investigating the mechanisms of amylolysis of starch granules by solution-state NMR" **Biomacromolecules**, 16, 1614-1621 (2015).
716. S.W. Chen, S. Drakulic, E. Deas, M. Ouberai, F.A. Aprile, R. Arranz, S. Ness, C. Roodveldt, T. Williams, E.J. De Genst, D. Klenerman, N.W. Wood, T.P. Knowles, C. Alfonso, G. Rivas, A.Y. Abramov, J.M. Valpuesta, C.M. Dobson and N. Cremades, "Structural characterization of toxic oligomers that are kinetically trapped during  $\alpha$ -synuclein fibril formation" **Proc Natl Acad Sci USA**, 112, E1994-2003 (2015).
717. S.I. Cohen, P. Arosio, J. Presto, F.R. Kurudenkandy, H. Biverstål, L. Dolfe, C. Dunning, X. Yang, B. Frohm, M. Vendruscolo, J. Johansson, C.M. Dobson, A. Fisahn, T.P. Knowles and S. Linse, "A molecular chaperone breaks the catalytic cycle that generates toxic A $\beta$  oligomers" **Nat Struct Mol Biol**, 22, 207-213 (2015).
718. P. Cyriam, R. Kundra, R.I. Morimoto, C.M. Dobson and M. Vendruscolo, "Supersaturation is a major driving force for protein aggregation in neurodegenerative diseases" **Trends Pharmacol Sci**, 36, 72-77 (2015).
719. E. De Genst, D.Y. Chirgadze, F.A. Klein, D.C. Butler, D. Matak Vinković, Y. Trottier, J.S. Huston, A. Messer and C.M. Dobson, "Structure of a single-chain Fv bound to the 17N-terminal amino acids of huntingtin provides insights into pathogenic amyloid formation and suppression" **J Mol Biol**, 427, 2166-2178 (2015).
720. A. De Simone, F.A. Aprile, A. Dhulesia, C.M. Dobson and M. Vendruscolo, "Structure of a low-population intermediate state in the release of an enzyme product" **Elife**, 4, 02777 (2015).
721. J. Dworzak, B. Renvoisé, J. Habchi, E.V. Yates, C. Combadière, T.P.J. Knowles, C.M. Dobson, C. Blackstone, O. Paulsen and P.M. Murphy, "Neuronal cx3cr1 deficiency protects against amyloid  $\beta$ -induced neurotoxicity" **PLoS One**, 10, e0127730 (2015).
722. C. Galvagnion, A.K. Buell, G. Meisl, T.C. Michales, M. Vendruscolo, T.P.J. Knowles and C.M. Dobson, "Lipid vesicles trigger  $\alpha$ -synuclein aggregation by stimulating primary nucleation" **Nat Chem Biol**, 11, 229-234 (2015).
723. T.W. Herling, G.A. Garcia, T.C. Michaels, W. Grentz, J. Dean, U. Shimanovich, H. Gang, T. Müller, B. Kav, E.M. Terentjev, C.M. Dobson and T.P.J. Knowles, "Force generation by the growth of amyloid aggregates" **Proc Natl Acad Sci USA**, *In Press* (2015).
724. T.P.J. Knowles, M. Vendruscolo and C.M. Dobson, "The physical basis of protein

misfolding disorders" **Physics Today**, 68, 36-41 (2015).

725. Z. Pietralik, J.R. Kumita, C.M. Dobson and M. Kozak, "The influence of novel gemini surfactants containing cycloalkyl side-chains on the structural phases of DNA in solution" **Colloids Surf B Biointerfaces**, 131, 83-92 (2015).
726. U. Shimanovich, I. Efimov, T.O. Mason, P. Flagmeier, A.K. Buell, A. Gedanken, S. Linse, K.S. Akerfeldt, C.M. Dobson, D.A. Weitz and T.P. Knowles, "Protein microgels from amyloid fibril networks" **ACS Nano**, 9, 43-51 (2015).
727. D.M. Walther, P. Kasturi, M. Zheng, S. Pinkert, G. Vecchi, P. Ciryam, R.I. Morimoto, C.M. Dobson, M. Vendruscolo, M. Mann and F.U. Hartl, "Widespread proteome remodeling and aggregation in aging *C. elegans*" **Cell**, 161, 919-932 (2015).
728. A.R. Wyatt, J.R. Kumita, N.E. Farrowell, C.M. Dobson and M.R. Wilson, "Alpha-2-Macroglobulin is acutely sensitive to freezing and lyophilization: implications for structural and functional studies" **PLoS One**, 10, e0130036 (2015).
729. X.M. Zhou, U. Shimanovich, T.W. Herling, S. Wu, C.M. Dobson, T.P.J. Knowles, and S. Perrett, "Enzymatically active microgels from self-assembling protein nanofibrils for microflow chemistry" **ACS Nano**, 9, 5772-81 (2015).