

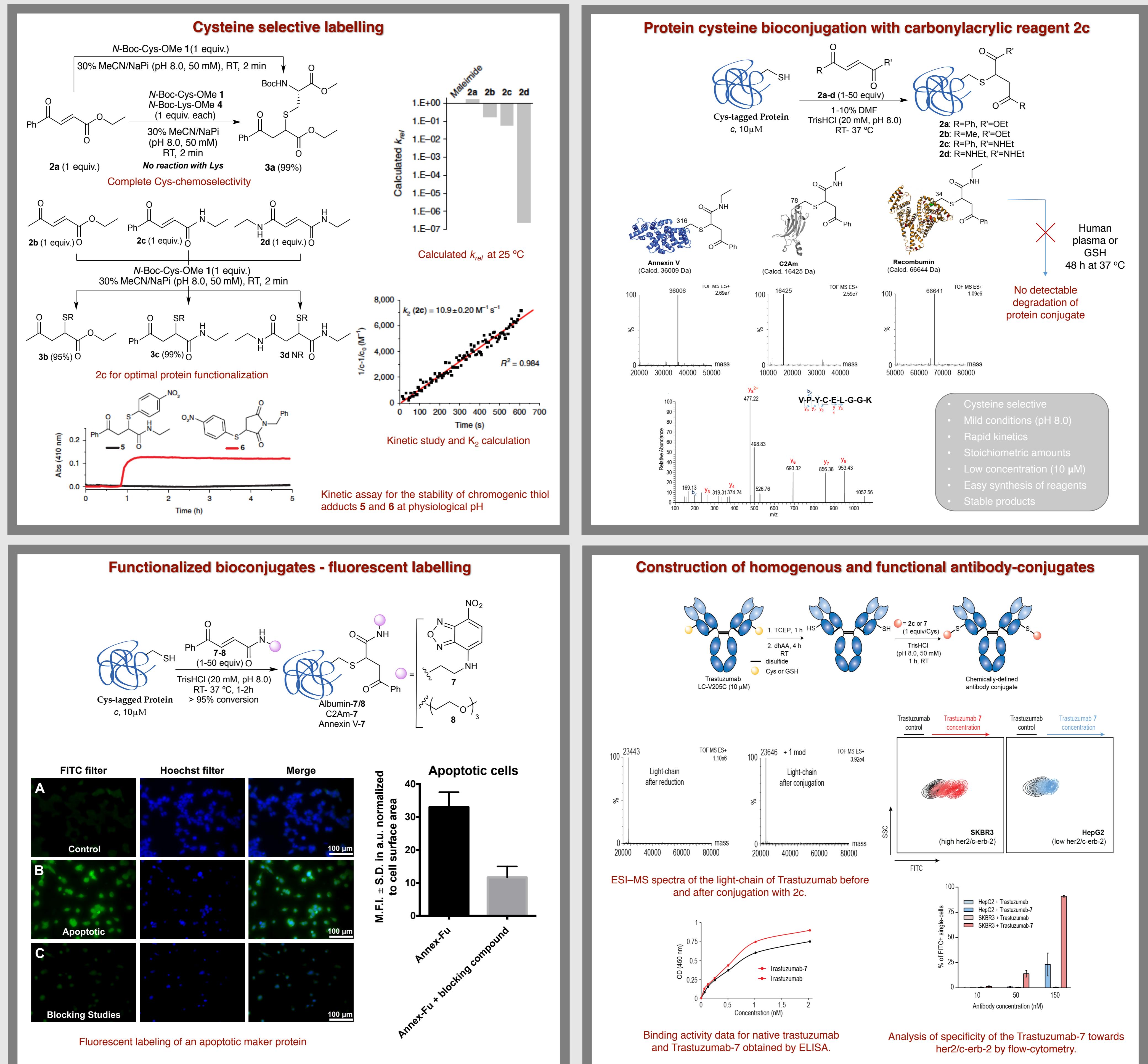


# STOICHIOMETRIC AND IRREVERSIBLE CYSTEINE-SELECTIVE PROTEIN MODIFICATION USING CARBOXYLACRYLIC REAGENTS

Maria J. Matos,<sup>1</sup> Barbara Bernardim,<sup>1,2</sup> Pedro M. S. D. Cal,<sup>1,3</sup> Bruno Oliveira,<sup>1</sup> Nuria Martinez-Sáez,<sup>1</sup> Inês Albuquerque,<sup>1</sup> Antonio Burtoloso,<sup>2</sup> Francisco Corzana,<sup>4</sup> Gonzalo Jiménez-Osés,<sup>4</sup> Gonçalo J. L. Bernardes<sup>1,3</sup>

<sup>1</sup> Department of Chemistry, University of Cambridge, Cambridge, UK, <sup>2</sup> Instituto de Química de São Carlos, Universidade de São Paulo, São Carlos-SP, Brazil, <sup>3</sup> Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisboa, Portugal, <sup>4</sup> Departamento de Química, Universidad de La Rioja, Centro de Investigación en Síntesis Química, Logroño, Spain

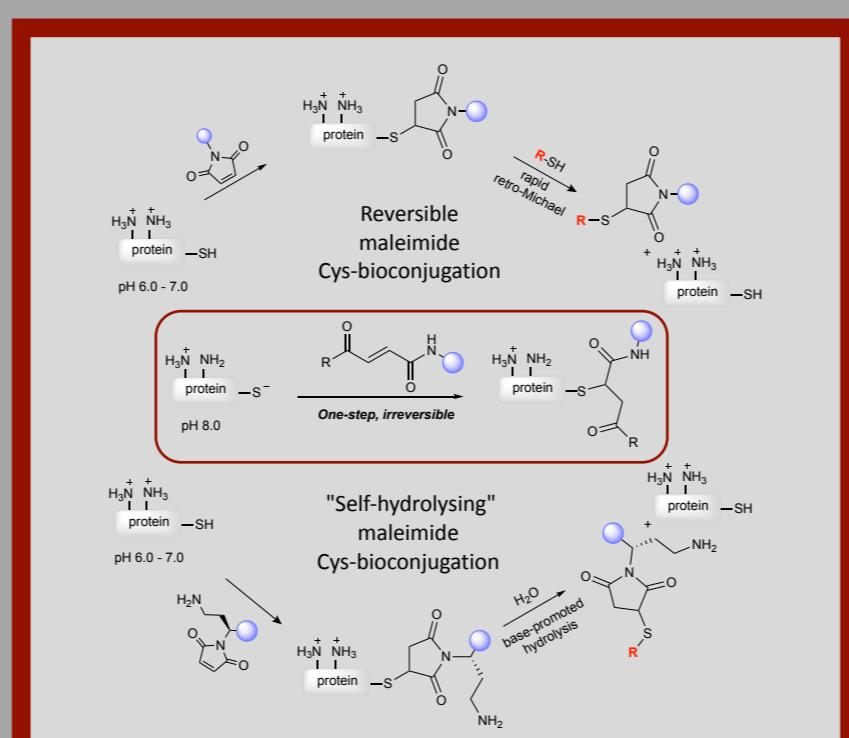
e-mail: mm2147@cam.ac.uk



## CONCLUSIONS

A direct and irreversible Cys-selective bioconjugation is reported using simple carbonyl acrylic reagents. The conjugates are fully stable when exposed to GSH and plasma, and retain their function, as evidenced by the selective imaging of apoptotic and high expression her2+ cells. The direct chemoselective and irreversible Cys-conjugation technology disclosed herein will find significant use for the preparation of imaging and therapeutic conjugates for *in vivo* purposes.

Bernardes *et al.* *Nature Commun.* 2016, DOI: 10.1038/ncomms13128



## ACKNOWLEDGEMENTS

FAPESP (2012/22274-2; BEPE 2015/07509-1 to B.B. and A.C.B.B.), Xunta de Galicia (M.J.M.), FCT Portugal (G.J.L.B.; P.M.S.D.C.; I.A.), the EU (Marie-Sklodowska Curie ITN Protein Conjugates), and the EPSRC for funding.

## REFERENCES

- Ann. Oncol. 2002, 13, 1743
- Nat. Biotech. 2008, 26, 925
- Nat. Biotech. 2012, 30, 184
- Nat. Biotech. 2014, 32, 1059
- Angew. Chem. Int. Ed. 2014, 53, 10585
- Angew. Chem. Int. Ed. 2016, 55, 1432

