Biol. Chem., Vol. 388, p. 875, September 2007 • Copyright © by Walter de Gruyter • Berlin • New York. DOI 10.1515/BC.2007.116

Paper of the Year 2006: Award to Pamela Hamill

The 'Paper of the Year Award 2006' honors the best paper published in *Biological Chemistry* in 2006. The winner is selected by the Editors of *Biological Chemistry* and the Board of the Gesellschaft für Biochemie und Molekularbiologie (GBM). This year's awardee is Dr. Pamela Hamill, who is the first author of the paper entitled 'Development of a red-shifted fluorescence based assay for SARS-coronavirus 3CL protease: identification of a novel class of anti-SARS agents from the tropical marine sponge *Axinello corrugata*' (*Biol*. *Chem*. 387, pp. 1063–1074, 2006).

Together with her colleagues from the University of British Columbia, Novato, University of Hong Kong and GL Biochem Ltd. in Shanghai, Dr. Hamill synthesized a quenched fluorogenic substrate, which, upon specific cleavage by the SARS-coronavirus-encoded protease $3CLP^{ro}$, produces a red-shifted fluorescence. In contrast to previous known fluorogenic substrates, the one developed in this work is not sensitive to interference from colored samples.

Quenched fluorogenic substrates carry a fluorogenic emitter group in such a way that the light emitted by the fluorophore is back-absorbed by the quencher group. This is called resonance energy transfer. In between the two groups is a peptide sequence that is recognized by the protease under study (the cleavage function). When the protease shows activity, the donor and acceptor groups become spatially separated and the light emitted by the donor becomes detectable: the substrate lights up. The importance of the paper is that for the first time the donor and acceptor groups have been selected such that upon spatial separation, fluorescence is in the red spectral region, so that colored samples do not reabsorb the emitted light. This allows screening of a much broader spectrum of potential protease inhibitors that would otherwise interfere with the assay. Using this method, the authors identified novel protease inhibitors for the 3 CL-protease. This enzyme plays an essential role in the viral life cycle of the severe acute respiratory syndrome (SARS) virus, which recently posed a serious threat to humans.

Dr. Hamill studied at the Universities of Plymouth and Glasgow (UK) and in her PhD work characterized the human cytomegalovirus protein UL102 at the MRC Virology Unit (Glasgow). The work awarded in *Biological Chemistry* was part of her postdoctoral research carried out in the laboratory of Dr. François Jean at the Department of Microbiology and Immunology, University of British Columbia, Vancouver, Canada.

Dr. Hamill is currently a research associate at the Department of Microbiology and Immunology in the same university, where she studies molecular mechanisms of human innate immunity (Prof. R. Hancock). Dr. Hamill is author/co-author of five papers.

Joël Vandekerckhove
Executive Editor