

Media release from the Wellcome Trust

Embargoed until 00.01 GMT Thursday 18 December 2008

INTERNATIONAL PUBLIC-PRIVATE PARTNERSHIP OFFERS NEW PARADIGM FOR MEDICINAL CHEMISTRY

The Wellcome Trust today announces a £4.1 million investment in a new initiative to generate small molecule inhibitors – "chemical probes" – for 25 proteins involved in epigenetic signalling, and to release these probes into the public domain with no restriction on use. Early stage information sharing on chemical probes is highly unusual and breaks with the tradition of keeping such data confidential.

The public-private partnership, to be led by the Structural Genomics Consortium (SGC), also involves GlaxoSmithKline (GSK), the National Institutes of Health Chemical Genomics Center (NCGC) in Bethesda, USA, and the Departments of Chemistry and Biochemistry at the University of Oxford. The initiative could offer a new model for future interactions between academia and industry.

The study of epigenetics tries to understand heritable changes in gene function that occur without a change in the DNA sequence. This signalling is thought to influence the timing, amount and type of proteins made by genes: In diseases these proteins can be altered, for instance, in tumour cells specific proteins are often present at much higher levels than in normal cells. Researchers believe that by identifying how these parameters are controlled, they can better understand the factors that lead to many common diseases, such as cancer, diabetes, obesity and Alzheimer's disease.

The SGC-led initiative aims to develop "chemical probes", small molecules that can stimulate or block the activity of a protein, specifically designed to affect the activity of proteins involved in epigenetic control. They will complement genetic knockouts and RNAi approaches to understand the role of these proteins in biology. The probes need to be highly selective for their target protein, and suitable for use in cellular settings. It is hoped that some probes may be a starting point for drug discovery.

The partnership is unique in that it brings the medicinal chemistry expertise within industry together with the biological expertise within academia to address an emerging area of biology. In this regard, the initiative may provide an excellent model for future interactions between academia and industry in the area of "pre-competitive chemistry".

"Well characterised chemical probes are hugely useful for target validation and exploration of biology," said Dr Patrick Vallance, senior vice-president of Drug Discovery at GSK. "This link between the academic community and GSK in an emerging area of science should enhance knowledge and ultimately support our efforts to develop more medicines of benefit to patients."

In keeping with SGC policy, the structure and function of each probe will promptly be made freely available. Traditionally, pharmaceutical compounds have often only been released for public use after the relevant drug development program has been completed. It was thought that releasing an early-stage inhibitor would hamper further research in the corresponding area by the pharmaceutical sector, but history shows that the pharmaceutical industry is far more likely to pursue a drug discovery programme if there are already well-characterised inhibitors with defined mechanisms of action available.

The NCGC, led by its director, Dr Christopher Austin, will make several contributions to the project, from assay development to high-throughput screening to medicinal chemistry.

"This is a unique collaboration bringing together the chemistry might of a large pharmaceutical company with cutting edge activities in the academic sector to deliver chemical probes to the global scientific community," says Dr Chas Bountra, Chief Scientist at SGC in Oxford. "I believe this venture creates a paradigm shift as GSK opens up its internal chemistry capability to create new chemical probes that can be freely used by all academic and industrial scientists."

"Industry and academic both stand to benefit from this relationship," says Dr Alan Schafer, Head of Molecular and Physiological Sciences at the Wellcome Trust. "The academic community will have access to the sophisticated research tools generally only available to industrial partners, and the resultant application in academic research will serve to further stimulate drug development by pharmaceutical companies. Ultimately this is about enabling the translation of biomedical research discoveries into therapies for the benefit of patients."

Ends

Contact

Craig Brierley
Media Officer
The Wellcome Trust
T: 020 7611 7329
E: c.brierley@wellcome.ac.uk

Johan Weigelt
Associate Director
The Structural Genomics Consortium
T: +46 70 263 0255
E: johan.weigelt@ki.se

Notes for editors

1. **The Wellcome Trust** is the largest charity in the UK. It funds innovative biomedical research, in the UK and internationally, spending over £600 million each year to support the brightest scientists with the best ideas. The Wellcome Trust supports public debate about biomedical research and its impact on health and wellbeing. <http://www.wellcome.ac.uk>

2. **The Structural Genomics Consortium** (SGC) is a not-for-profit organization formed in July 2004 to determine the three-dimensional structures of proteins of medical relevance, and place them in the public domain immediately and without restriction. The SGC's 180 scientists work out of the Universities of Oxford and Toronto and Karolinska Institutet, Stockholm. <http://www.thesgc.org>

The SGC receives funding from Canadian, Swedish and British sponsors representing both the public and private sectors: the Canada Foundation for Innovation (innovation.ca), Canadian Institutes of Health Research (CIHR) (cihr-irsc.gc.ca), Genome Canada (genomecanada.ca) through the Ontario Genomics Institute (OGI) (OntarioGenomics.ca), Karolinska Institutet (ki.se), the Knut and Alice Wallenberg Foundation (wallenberg.org), the Swedish Governmental Agency for Innovation Systems (VINNOVA) (vinnova.se), Swedish Foundation for Strategic Research (stratresearch.se), the Ontario Ministry of Research and Innovation (mri.gov.on.ca), the Wellcome Trust (wellcome.ac.uk), GlaxoSmithKline plc. (GSK) (gsk.com), Merck (merck.com) and Novartis (novartis.com).

3. **GlaxoSmithKline plc** (GSK) is one of the world's leading research-based pharmaceutical and health care companies and is committed to improving the quality of human life by

enabling people to do more, feel better and live longer. The 15,000 people working in GSK's global R&D organization discover, develop, register and support the commercialization of prescription medicines and vaccines for the treatment and prevention of human disease. <http://www.gsk.com>

4. The National Institutes of Health Chemical Genomics Center (NCGC) is an ultrahigh-throughput screening and chemistry center that discovers chemical probes of gene and cell functions, to be used as research tools for the elucidation of biological functions, or as starting points to the development of new therapeutics for rare and neglected diseases. The NCGC collaborates with over 100 investigators from academic, foundation, and biopharmaceutical laboratories throughout the world, utilizing its unique quantitative high-throughput screening (qHTS) paradigm and innovative cheminformatics and medicinal chemistry platforms to produce new insights in chemical biology, and general principles of chemical interactions with living systems. <http://www.ncgc.nih.gov>