Biomedical Sciences Institutes
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p53 Laboratory Seminar Announcement

- All Are Welcome -



Speaker: **Prof Gerard Evan**
Sir William Dunn Professor of Biochemistry & Head of Dept.
Dept. Biochemistry, University of Cambridge, United Kingdom

Title : ***"Modelling new strategies to treat cancer"***

Date : **12 January 2012 (Thursday)**

Time : **10.00am – 11.00am**

Venue : **Aspiration Theatrette, Matrix Level 2M, Biopolis**

Host : **Prof Sir David Lane**
(Tel: 64070553, e-mail: dplane@p53lab.a-star.edu.sg)

Abstract:

Despite dramatic advances in the use of conventional chemo and radiotherapy and the growth of more "targeted" drugs, cancers remain lethal disease in desperate need of new therapeutic approaches. The principal problem is that we have no systematic or informed way of predicting which, out of the legion of aberrant processes in cancer cells, is the best to target with drugs or where, within that process, the most effective molecular targets lie. As a consequence, drug development is driven by what is deemed feasible and deliverable rather than by what might be most therapeutically effective. To address this problem, we employ a novel class of genetically engineered mouse (GEM) in which individual oncogenes and/or tumor suppressor genes may be systemically toggled off and on, reversibly and at will, *in vivo*. In this way we can test and validate therapeutic targets irrespective of contemporary (and ephemeral) prejudices as to their "druggability". This approach will be illustrated by three such GEMs: one mouse that models pharmacological inhibition of Myc, a core component of the replicative machinery of all tumour and normal cells and a downstream conduit for many (perhaps all) oncogenic growth signals, a second mouse that models inhibition of E2F, the transcription factor required to drive cells into the cell cycle, and a third that models pharmacological restoration of the p53 tumour suppressor that is functionally inactivated in most human cancers. Since it is the endogenous oncogene or tumour suppressor that is regulatable in such GEMs, they can be easily applied to any existing or new preclinical mouse cancer model. Using these three GEMs, we have directly ascertained the therapeutic impact, efficacy and side effects of Myc and E2F inhibition and p53 restoration - establishing mechanism of action, side effects on normal tissues and therapeutic efficacy against different types of cancer.

About the Speaker:

BA in Biochemistry (University of Oxford), Ph.D in Molecular Immunology (University of Cambridge and Medical Research Council Laboratory of Molecular Biology). Post-Doctoral Fellow, laboratory of J. Michael Bishop at UCSF. Assistant Professor, Ludwig Institute for Cancer Research and Research Fellow of Downing College, Cambridge (1984-8). Principal Scientist at the Imperial Cancer Research Fund Laboratories in London (1988-99) and Royal Society Napier Professor of Cancer Research (1996-9) at University College London. Gerson and Barbara Bass Bakar Distinguished Professor of Cancer Research, University of California San Francisco (1999-2009). Sir William Dunn Professor of Biochemistry, University of Cambridge (2009-present). Pfizer Prize in biology (1995); EMBO (1996); Joseph Steiner Prize (1996); UK Academy of Medical Sciences (1999); Eppley Visiting Professor of Cancer Research at the University of Nebraska (2001); Fellow of the Royal Society of London (2004); Neal Levitan Research Chair of the Brain Tumor Society (2004); Senior Scholar of the Ellison Medical Research Foundation for Aging (2006); Alan J. Underberg Memorial Lecture, University of Rochester, NY (2007); Chair, Gordon Conference on Cancer Models and Mechanisms (2008); 9th Annual Marguerite Vogt Lecturer in Cancer Biology, Salk Institute (2008); George Daniel Brooks Lectureship in Oncology, Vanderbilt-Ingram Cancer Center, Nashville (2009); Alkis Seraphim Memorial Lecture, Cambridge University (2009); 23rd Ransom Lecture, University of Nottingham (2009); Elected Fellow of Christ's College, Cambridge (2010). Member of the Cancer and Molecular Pathobiology and the EUREKA Study Sections of the NIH (2001-2009). Member of the Scientific Advisory Boards of DNAX, Genomic Health, Inc., Ensemble Inc. Consultant to Genentech, Novartis, GSK.