For favour of Posting

THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY
Division of Life Science

Seminar Notice

"Contribution of classical end-joining to PTEN inactivation in p53-mediated glioblastoma formation and drug-resistant survival"

By

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Abstract

DNA repair gene defects are found in virtually all human glioblastomas, but the genetic evidence for a direct role remains lacking. Here we demonstrate that combined inactivation of the XRCC4 non-homologous end-joining (NHEJ) DNA repair gene and p53 efficiently induces brain tumours with hallmark characteristics of human proneural/classical glioblastoma. The murine tumours exhibit PTEN loss of function instigated by reduced PTEN mRNA, and increased phosphorylated inactivation and stability as a consequence of aberrantly elevated CK2 provoked by p53 ablation and irrevocably deregulated by NHEJ inactivation. This results in DNA damage-resistant cytoplasmic PTEN and CK2 expression, and the attenuation of DNA repair genes. CK2 inhibition restores PTEN nuclear distribution and DNA repair activities and impairs tumor but not normal cell survival. These observations demonstrate that NHEJ contributes to p53-mediated glioblastoma suppression, and reveal a crucial role for PTEN in the early DNA damage signaling cascade, the inhibition of which promotes tumorigenicity and drug-resistant survival.

Date : 9 March 2017 (Thursday)
Time : 3pm
Venue : Room 2304 (Lifts 17/18)
The HK University of Science & Technology, Clear Water Bay, Kowloon

(Host faculty: Prof. Randy Poon/Prof. Bik Tye)

All are Welcome!