



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

LIFS Seminar Series

**Policing secretion: regulating protein export
from the endoplasmic reticulum**

by

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Abstract:

Protein quality control surveillance within the secretory pathway remains poorly understood. We use systematic approaches to discover proteins that influence the quality control of nascent proteins in the endoplasmic reticulum (ER). We screened ~4500 yeast strains for defects in ER retention. The majority of screen hits encode proteins involved in biogenesis of cell wall proteins. We propose that the absence of these abundant highly glycosylated proteins creates space in COPII vesicles that permits stochastic capture of ER residents by bulk flow. We confirmed that lax quality control correlates with vesicle occupancy, vesicle size and vesicle number, consistent with our model. In a separate screen we searched for regulators of ER quality control of a misfolded form of the yeast ABC transporter, Yor1, equivalent to human CFTR. We discovered an unexpected role for an ER export receptor, Erv14, which seems to increase the affinity of cargo proteins for the vesicle coat proteins, thereby enhancing ER egress. Together, our data suggest a stochastic model for ER export based on cargo-coat affinities to drive cargo selectivity and steric crowding to exclude inappropriate cargo.

Date : **16 March 2018 (Friday)**
Time : **4:00 p.m.**
Venue : **Lecture Theatre C**
**The Hong Kong University of Science
& Technology**
Clear Water Bay, Kowloon

(Host faculty: Prof. Yusong Guo)

All are Welcome!!