DukeNUS Medical School

Signature Seminar Series

Role of the Eya3/PP2A Complex in Mediating Immune Evasion of Breast Cancer

ABOUT THE LECTURE

Eya proteins are key developmental regulators that are highly expressed in embryogenesis and downregulated after development. Re-expression of Eyas occurs in breast and other cancers, where they promote tumor progression through acting as Six protein transcriptional cofactors and as tyrosine phosphatases. Eyas also contain a separate domain with Thr phosphatase activity. Herein, we describe a novel role for Eya3 in mediating tumor associated immune suppression. Eya3 enhances mammary tumor growth in immune competent mice, via decreasing infiltration of cytotoxic CD8+ T-cells into tumors, and leading to T-cell exhaustion. Mechanistically, Eya3, through its Thr phosphatase activity, upregulates PD-L1 expression on mammary carcinoma cells, and rescue of PD-L1 in Eya3 KD cells restores tumor growth. In contrast to previous reports which suggest that Eya3 contains intrinsic Thr phosphatase activity, we demonstrate that this activity of Eya is mediated through an association with PP2A, altering its regulation of c-Myc, a known regulator of PD-L1. Finally, we find that breast tumors expressing Eya3 have a decreased CD8+ T-cell signature, providing relevance to the human setting.

Speaker: **Prof Heide L Ford**
Professor, Department of Pharmacology
Associate Director of Basic Research
University of Colorado Cancer

Host: **Prof David Virshup**
Professor and Director
Cancer & Stem Cell Biology Programme
Duke-NUS Medical School

Date: **Tuesday, 4 July 2017**

Time: **12.00 PM - 1.00 PM**
(Light refreshments will be served at 11.30 AM)

Venue: **Duke-NUS Medical School**
Amphitheatre, Level 2

Contact Person: **Ms Kathleen Chan, Duke-NUS Research Affairs Department**
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ABOUT THE SPEAKER

Dr. Ford received a Ph.D. in Biochemistry from the University of Rochester, and performed a postdoctoral fellowship with Arthur Pardee at The Dana-Farber Cancer Institute. She is a Tenured Professor in the Department of Pharmacology at The University of Colorado (UC), and holds the David and Margaret Turley Grohne Chair in Basic Cancer Research. She serves as the Associate Director of Basic Research in The UC Cancer Center. Her research revolves around developmental regulators in metastasis.



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