

PHD ORAL DEFENSE

BIOLOGICAL INSIGHTS INTO Y-BOX BINDING PROTEIN-1 (YB-1) MEDIATED BREAST CANCER METASTASIS

Metastasis is the main cause of breast cancer mortality. Y-box binding protein-1 (YB-1) is a transcription factor frequently elevated in breast cancer, in which its exact role in mediation of metastasis remains to be elucidated. Hence, the main objective is to elucidate the underlying mechanism(s) for YB-1-mediated metastasis. Clinico-pathological studies of breast cancer tissues revealed that high expression of YB-1 correlated with tumour aggressiveness and poorer outcome. Phenotypic studies after manipulation of YB-1 expression were carried out together with microarray and/or whole proteome analyses in breast cancer cell lines. In mesenchymal-like MDA-MB-231 and Hs578T breast cancer cells, YB-1 was found to regulate cell migration and/or invasion (crucial steps in metastasis) via coronin-1C, matrix metalloproteinase 1 or beta-catenin. Whereas in epithelial-like MCF7 breast cancer cells, YB-1 facilitated cell migration via partial epithelial-mesenchymal-transition and secretion of exosomal fatty acid binding protein 5. In conclusion, YB-1 mediates breast cancer metastasis via various mechanisms, which is also dependent on the morphological subtype (whether epithelial-like or mesenchymal-like).

Monday

10 December 2018

10.00 am - 11.00 am

Seminar Room, MD10

Level 2, Anatomy Museum

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