Centre for
Heart Lung Innovation
UBC and St. Paul's Hospital

Centre for Heart Lung Innovation Research in Progress (R.I.P.)

Genetic variation in RARG influences susceptibility to doxorubicin-induced cardiotoxicity in patient-specific iPSC-derived cardiomyocytes

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Monday, January 25th, 2021
9:00 – 10:00 a.m.
Zoom Video Conference
(Meeting ID: 693 1997 7044; Passcode: 030679)

"Doxorubicin is potent chemotherapeutic drug, but its use is associated with doxorubicin-induced cardiotoxicity (DIC). A genetic wide association study has implicated a variant in the RARG gene (S427L; rs2229774) in DIC susceptibility. We used patient specific hiPSC-derived cardiomyocytes (CMs) and CRISPR/Cas9 to generate isogenic cells lines that differed only at the RARG locus in order to investigate the functional role of RARG in DIC. Introduction of the S427L variant to hiPSC-CMs increased the susceptibility to doxorubicin-induced cell death, whereas correction of RARG-S427L to wild-type resulted in reduction in cell death from DIC. These results establish a causal role for RARG in the pathogenesis of DIC."

This event is a Self-Approved Group Learning Activity as defined by the Maintenance Certification Program of the Royal College of Physicians and Surgeons of Canada