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Aberrant PD-1 ligand expression contributes to the myocardial inflammatory injury caused by Coxsackievirus B infection

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Abstract

Coxsackievirus group B (CVB) is considered as one of the most common pathogens of human viral myocarditis. CVB-induced myocarditis is mainly characterized by the persistence of the virus infection and immune-mediated inflammatory injury. Costimulatory signals are crucial for the activation of adaptive immunity. Our data reveal that the CVB type 3 (CVB3) infection altered the expression profile of costimulatory molecules in host cells. CVB3 infection caused the decrease of PD-1 ligand expression, partially due to the cleavage of AU-rich element binding protein AUF1 by the viral protease 3Cpro, leading to the exacerbated inflammatory injury of the myocardium. Moreover, systemic PD-L1 treatment, which augmented the apoptosis of proliferating lymphocytes, alleviated myocardial inflammatory injury. Our findings suggest that PD1-pathway can be a potential immunologic therapeutic target for CVB-induced myocarditis.

Biography:

Ms Xueqing Wang is a PhD Candaidate from the School of Medical and Health Sciences at Edith Cowan University. Her PhD Project is 'How Coxsackievirus B3 Infection Acts as a Risk Factor for Type 2 Diabetes Mellitus by Triggering Autophagy and Persistent Inflammation'. She has published 5 papers as the co-author in reputed journals and won the 2nd price in the Australian academic transformation speech contest, Alpha Innovation Contest 2019.

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