

Dendritic cells expressing MHC epitopes reduce allo-reactivity *in vitro*



Valeriy Tereshchenko, Kurilin V, Shevchenko J, Maksyutov A and Sennikov S

Novosibirsk State University, Russia

Abstract

Ozone is a highly reactive environmental pollutant with well-recognized adverse effects on lung health. Bronchial hyperactivity is one consequence of ozone exposure, particularly problematic for individuals with underlying lung disease. Here the author shows that ozone induces substantial ATP release from human airway epithelia *in vitro* and into the airways of mice *in vivo*, and that ATP is a potent inducer of BHR. Both mast cell deficient and P2X7 deficient mice have markedly attenuated BHR to ozone and to ATP, suggesting that ATP induces BHR indirectly through activation of P2X7 purinergic receptors on mast cells. ATP-induced mast cell activation is eliminated in mast cells from P2X7 deficient mice and in human mast cells treated with a selective P2X7 receptor antagonist. Collectively, these data suggest that mast cell activation by ATP is central to the pathogenesis of ozone induced BHR. Strategies targeting mast cells, mast cell products, or P2X7 receptors on high ozone days may be therapeutic for vulnerable patients with underlying lung disease.

Biography

Valeriy Tereshchenko graduated from Novosibirsk State University in 2014. He is researcher in Research Institute of Fundamental and Clinical Immunology, Novosibirsk, Russia. He has 7 publications and H-index 1.



3rd Global Conference on Tissue Engineering and Regenerative Medicine, Stem Cell Research, June 29-30, 2020

Citation: Valeriy Tereshchenko, Kurilin V, Shevchenko J, Maksyutov A and Sennikov S, *Dendritic cells expressing MHC epitopes reduce allo-reactivity in vitro*, Regenerative Medicine 2020, 3rd Global Conference on Tissue Engineering and Regenerative Medicine, Stem Cell Research, June 29-30, 2020, Pages 06