

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 3674  
**Publication Number:** P880

**Abstract Group:** 5.3. Allergy and Immunology

**Keyword 1:** Allergy **Keyword 2:** Immunology **Keyword 3:** Cell biology

**Title:** Role of TRPC6 channel in eosinophil function

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**Body:** [Objective] Calcium homeostasis plays a key role in the regulation of many functional responses such as degranulation, lipid mediator release in airway inflammatory cells, including eosinophils. The transient receptor potential canonical (TRPC) channels are known as a subfamily of nonselective cation channels permeable to Ca<sup>2+</sup>, and thought to have a significant role in airway inflammation. Among the TRPC channels, TRPC6 expression has been demonstrated in human eosinophils. The objective of this study was to examine the role of TRPC channel in Ca<sup>2+</sup> signaling and eosinophil degranulation. [Methods] Eosinophils were isolated from human peripheral blood of mildly atopic donors by a modification of the negative selection immunomagnetic separation technique. Detection of TRPC6 protein in human eosinophils was performed using Western blot analysis. Eosinophil peroxidase release was measured by enzyme assay. Intracellular Ca<sup>2+</sup> concentration was measured fluorometrically with Fluo3-AM loaded eosinophils as previously described. [Result] A TRP family member, TRPC 6 expression was detected in human eosinophils by Western blotting. Application of FMLP caused a transient increase in intracellular Ca<sup>2+</sup> concentration and that was decreased when cells were preincubated with TRP channel inhibitor, SKF96365. FMLP-induced EPO release was also inhibited by SKF96365. [Conclusion] Our data demonstrate that TRP channel inhibitor, SKF96365, inhibited the FMLP-induced intracellular Ca<sup>2+</sup> increase and eosinophil degranulation. TRP6 may have profound effect on the regulation of eosinophil functional responses through the Ca<sup>2+</sup>influx pathway.