

**P010** ATP/P2X<sub>7</sub> stimulates macrophage apoptosis and killing of intracellular mycobacteria.

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**Introduction.** Apoptotic macrophages are seen within the granuloma of organs infected with mycobacterium tuberculosis. Macrophages infected with mycobacteria and stimulated with adenosine triphosphate (ATP) undergo apoptosis and simultaneously kill the intracellular mycobacteria. Pharmacological and physiological studies have suggested that the purinergic receptor P2X<sub>7</sub> is involved.

**Methods.** Bone marrow derived macrophages (BMDM) from wild type and P2X<sub>7</sub> gene disrupted mice were stimulated with ATP and DNA fragmentation assessed by in-situ end labelling (Tunel staining). BMDMs were infected with *Mycobacterium bovis* BCG prior to ATP stimulation. Mycobacterial viability was then assessed by lysing the cells, culturing the lysates and counting the colonies. Electron microscopy and confocal fluorescent microscopy were used to assess structural changes within the ATP stimulated macrophages infected with mycobacteria.

**Results/Conclusion.** The P2X<sub>7</sub> receptor is essential for ATP stimulated: 1) macrophage apoptosis, 2) killing of intracellular mycobacteria, 3) phagosome-lysosome fusion resulting in vacuole formation.