KARL-FRANZENS-UNIVERSITÄT GRAZ
UNIVERSITY OF GRAZ
INSTITUTE OF MOLECULAR BIOSCIENCES

Dr. Ingrid Pörnbacher
The Francis Crick Institute, London, United Kingdom

Epithelial cells release adenosine to promote local TNF production in response to polarity disruption

When: **Wednesday, December 19th, 10:00**

Where: **IMB, Humboldtstr. 48/2, SR 44.22**

Host: Univ.-Prof. Dr. Ronald Kühnlein

GUEST LECTURE INVITATION

Summary: Disruption of epithelial integrity contributes to chronic inflammatory disorders through persistent activation of stress signalling. Using the *Drosophila* model system, we recently uncovered a novel mechanism whereby disruption of apico-basal polarity promotes stress signalling. We could show that depletion of Scribbled (Scrib), a baso-lateral determinant, causes epithelial cells to release adenosine through equilibrative channels into the extracellular space. Autocrine activation of the adenosine receptor (AdoR) leads to transcriptional upregulation of TNF, which in turn boosts the activity of JNK signalling. Thus, disruption of cell polarity feeds into a well-established stress pathway through the intermediary of an adenosine signalling branch. Although this regulatory input could help ensuring an effective response to acute polarity stress, we suggest that it becomes deleterious in situations of low-grade chronic disruption by provoking a private inflammatory-like TNF-driven response within the polarity-deficient epithelium.
As a next step, I will investigate a possible role for this novel adenosine/AdoR/TNF signaling axis in metabolic conditions such as obesity, insulin resistance and diabetes.

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