

**P019** Cytoplasmic tail of IL-13R $\alpha$ 2 regulates IL-4 signal transduction

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Introduction: IL-13 and IL-4 play key roles in the progression of asthma. An IL-13 receptor, IL-13R $\alpha$ 2, binds IL-13 with high affinity but not IL-4. We have previously shown that IL-13R $\alpha$ 2 can modulate IL-4 responses and that this regulatory mechanism involves a physical interaction with IL-4 receptor, IL-4R $\alpha$ . We have examined this interaction using a bacterial reverse two-hybrid system (RTHS)

Methods: We have employed a RTHS, linking the interaction of the cytoplasmic tail of IL-13R $\alpha$ 2 with cytoplasmic domain of IL-4R $\alpha$ , to the survival of the host cell via life/death selection on selective media. ONPG assays were carried out to measure the IPTG dependent repression of the LacZ gene product.

Results: Our data has shown that the cytoplasmic domains of these two receptors do interact in a specific manner. Introduction of mutations in IL-13R $\alpha$ 2 tail significantly reduced the association of IL-13R $\alpha$ 2 with IL-4R $\alpha$ . Control experiments with a random peptide failed to show any interaction.

Conclusion: The cytoplasmic domain of IL-4R $\alpha$  associates with the short cytoplasmic tail of IL-13R $\alpha$ 2. This data suggest that the cytoplasmic tail of IL-13R $\alpha$ 2 may interfere with the association or activation of signalling molecules, such as JAK1, on IL-4R $\alpha$  and thus prevents downstream signal cascade.