Measuring Receptor Dimerization To Create Functional Cell-Based Assays for ~85% of the Interleukin Receptor Family

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**Abstract**

IL-23R (IL23R/IL12RB1) is stimulated by IL-23 but not by IL-12 or p40 monomer.

Dimerization of IL-12R (IL12RB1/IL12RB2) is stimulated by IL-12, but not by IL-23 or p40 monomer.

B.

Dimerization of IL-23R and IL-12R is highly specific.

Highly Specific Assays for Interleukin Receptors Across Multiple Families

The structural diversity in interleukin receptors. Receptors for interleukins are arranged in families. Each receptor is composed of at least two subunits.

- IL Family
- IL-2 Family
- IL-4 Family
- IL-10 Family
- IL-17 Family
- IL-18 Family
- IL-19 Family
- IL-20 Family
- IL-22 Family
- IL-24 Family

PathHunter® Dimerization Assay Technology

PathHunter® dimerization assay technology has been utilized to construct assays to interrogate an early event in the interleukin pathway signaling cascade. In brief, one receptor in the dimer is tagged with the PK fragment of the substrate light and the second subunit is fused to the EA component of the substrate light.

- **IL-17RA / IL-17RC (U-2 OS)**
- **IL-1R / IL-1RAP (U-2 OS)**

**Figure**

1. **Pathway Diagram**
   - Schematic representation of the receptors for macrophage colony-stimulating factor (M-CSF), granulocyte/macrophage CSF receptor (GM-CSF).

2. **Phylogram of Human Interleukins & Available Assays**
   - Phylogram showing the evolutionary relationships among interleukins.

3. **Summary & Conclusions**
   - Functional cell-based assays for ustekinumab & tocilizumab
   - Excellent reproducibility and precision

**Table**

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