Washington University in St. Louis
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ANTIBODY BLOCKING IL-12 AND IL-23 RECEPTORS TO TREAT INFLAMMATORY DISEASES

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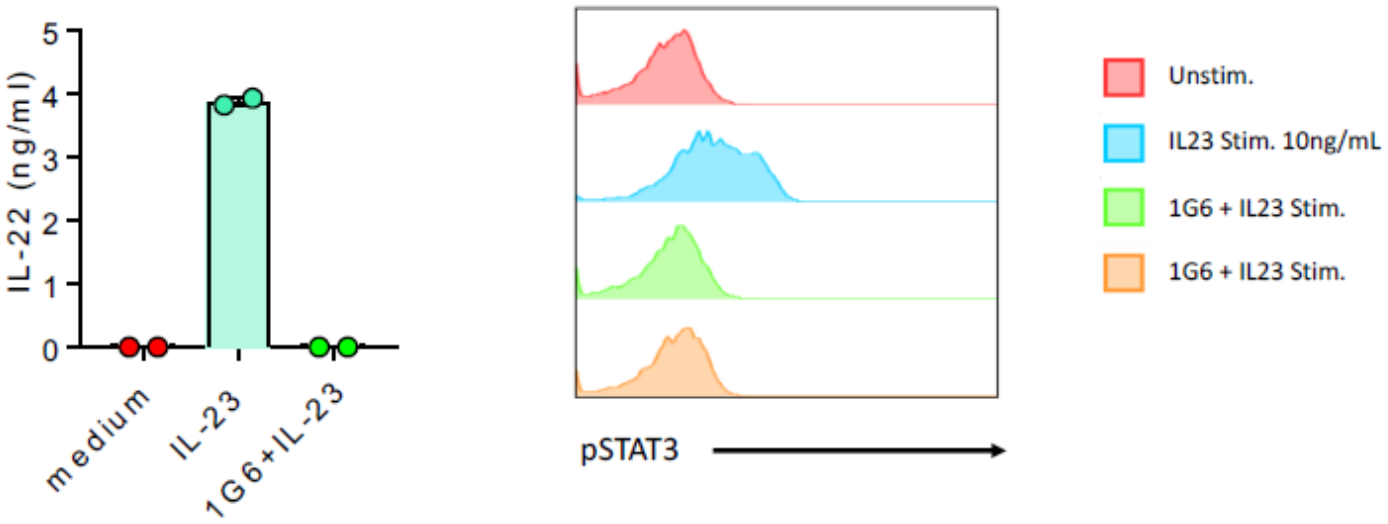
Disease indication – Autoimmune diseases (plaque psoriasis, psoriatic arthritis, Crohn's disease)

Drug format – Monoclonal antibody

Drug class – First-in-class

Research stage and preliminary data – Researchers have stimulated human ILC3s with IL-23 *in vitro*, with and without the presence of the antibody (1G6). When IL12RB1 is blocked, IL-23 is unable to stimulate cells to activate STAT3 and produce IL-22.



Target – Human IL-12 receptor B1 subunit

Background – Antibodies targeting IL-12 and IL-23 have emerged as effective alternatives when autoimmune patients become resistant to anti-TNF therapies. However, patients have also developed resistance to these therapies, particularly by upregulating IL-12R and IL-23R.

Mode of action – This antibody binds with high affinity to IL12RB1, a common subunit of both IL-12R and IL-23R. It completely prevents activation of the downstream signaling pathways.

Competitive edge – While several antibodies that target IL-12 and/or IL-23 have been commercialized, this antibody targets the common subunit in their receptors. It should be less affected by upregulation of IL-12 and IL-23 receptors, a mechanism of resistance observed in these other therapeutics. Additionally, the helper T cells causing pathogenesis express high levels of IL12RB1, so they may be preferentially targeted by this antibody.

Patent status – Pending

Web Links – Colonna Profile & Lab