

IL-1RA peptide



paradigm
BIOPHARMA

IP-1510: A retro-inverso, D-amino acid peptide Interleukin-1 Receptor Antagonist in the Management of Intestinal Inflammation

Partnership Opportunity:

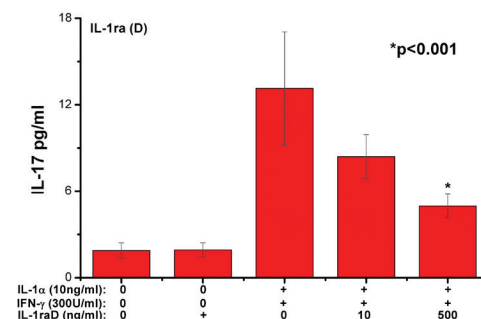
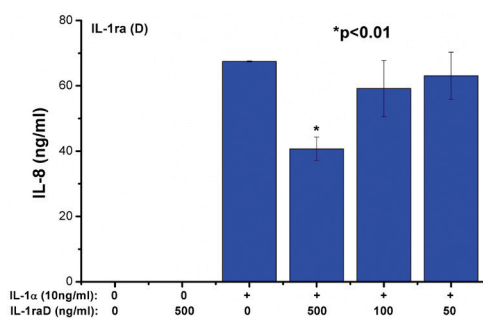
Novel IL1RA peptide, IP1510-safe and stable peptide for the treatment of inflammatory diseases of the gastrointestinal tract. cGMP manufacturing of IP1510 in progress.

Elevated levels of interleukin-1 (IL-1) and reduced levels of its natural antagonist IL-1ra have been observed in patients with inflammatory bowel disease. Polymorphisms of IL-1 and IL-1ra genes have been associated with the appearance of ulcerative colitis and resistance to treatment with steroids. Paradigm's IL-1RA peptide antagonist, IP1510 consists of D-amino acids with reversed peptide sequence (a retro-inverso peptide) demonstrating antagonistic activity by inhibiting signal transduction and higher stability suitable for a gastrointestinal product in comparison to the Human recombinant IL-1ra (Anakinra, Kineret).

- Paradigm has discovered that IP1510 has potential in the treatment of inflammatory bowel disease, ulcerative colitis, distal colitis and Crohn's disease.
- IP150 showed a reduction in IL-1 α -induced IL-8 and IL-17 production in colonic epithelial cells.
- IP150 compared to its L-enantiomer peptide counterpart is suitable for oral and sublingual formulation and is non-toxic.
- IP150 has a longer half-life in plasma-favouring lower doses and reduced frequency of administration.
- World Market for Inflammatory Bowel Disease Medicines predicted to reach 9.3 billion in 2019.

Data supporting IP1510 as a treatment for intestinal inflammation:

IP-1510 significantly ($p < 0.01$) inhibited the IL-1 α -induced IL-8 production by HT-29 colonic epithelial cells and IP-1510 significantly ($p < 0.001$) inhibited the IL-1 α + IFN γ -induced IL-17 production by HT-29 colonic epithelial cells.



The effect of IP-1510 on DSS-induced colitis A) Hematoxylin eosin staining of proximal colon B) Large bowel length assessment: Comparison of IP1510 with Anakinra in DSS Colitis model.

Figure A

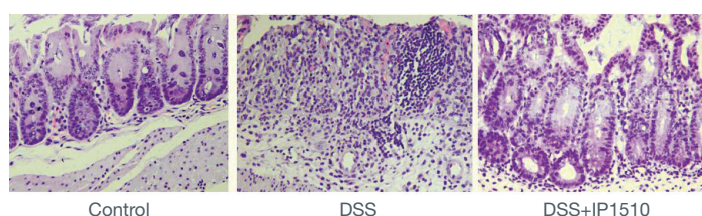


Figure B

