Ligands for FPR Class Receptors that Induce a Host Immune Response to a Pathogen or Inhibit HIV Infection

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Technology description

Summary

The NIH announces a technology that relates a synthetic amino acid peptide that has been discovered to have chemotactic activity and the ability to activate both the FPR and FPRL1 receptors. This peptide has been found by NIH investigators to be a potent inhibitor of cellular response to chemokines including those chemokines that use the CCR5 receptor. It has been found that the activation of the FPRL1 by the peptide will in fact inhibit HIV-1 fusion to a cell and its infection through the CCR5 receptor. The peptide can potentially be used as a topical drug in the anal-vaginal tract to prevent or reduce the mucosal transmission of HIV-1. It also has the potential to be used as a vaccine adjuvant to prime a host response from a patient to a microbial infection. In addition, because of its interaction with the FPR and FPRL1 receptor it could be used to design drugs which interfere with responses due to the presence of excess quantities of chemokines. The peptide is short and contains a D-amino acid so that it is economical and easy to synthesize. Also, it may be more resistant to proteolytic degradation in vivo, which will prolong its half-life and therefore make it more effective as a treatment.

Institution

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