

VIPER Peptide

Catalogue number: 153526

Sub-type: Synthetic Peptide

Images:

Contributor

Inventor: Andrew Bowie

Institute: Trinity College Dublin

Images:

Tool details

***FOR RESEARCH USE ONLY**

Name: VIPER Peptide

Alternate name:

CancerTools.org

Class:

Conjugate:

Description: Overview: Toll-like receptor 4 (TLR4) recognises pathogens leading to activation of the immune response, but also contributes to the development of a number of autoimmune and inflammatory diseases. As such, it has become a new target for drug development. Over millennia, viruses have optimised their ability to inhibit the immune response. Thus the Vaccinia virus protein A46 displays a remarkable ability to inhibit TLR4 function. This viral know-how has been exploited to develop an 11-amino acid peptide from A46, termed viral inhibitor peptide of TLR4, or VIPER, which, when fused to a cell-penetrating delivery sequence, potently and specifically inhibits TLR4-mediated responses in vitro and in vivo. Advantages: VIPER most likely represents a surface of A46 that has been optimised by the virus to potently inhibit TLR4, so has already been through a 'naturally occurring drug development programme'. VIPER is more effective at inhibiting TLR4 than other currently used peptide inhibitors of TLR4, in that it is more specific, more potent, less toxic, and is effective in primary human cells. Possible Applications: Experimental tool for exploring TLR4 complex formation and signalling, for analysing the role of TLR4 in in vivo models of disease and for predicting a role for Mal or TRAM in a disease process. Development as a therapeutic agent, for example by developing it into a peptidomimetic. Analysis of surfaces on Mal and TRAM targeted by VIPER as drugable sites during inflammation.

Purpose:

Parental cell:

Organism:

Tissue:

Model:

Gender:

Isotype:

Reactivity:

Selectivity:

Host:

Immunogen:

Immunogen UNIPROT ID:

Sequence: KYSFKLILAEY

Growth properties:

Production details:

Formulation:

Recommended controls:

Bacterial resistance:

Selectable markers:

Additional notes: VIPER has been validated preclinically for efficacy, with ongoing work being carried out in disease models. US patent 8,722,052

Target details

Target: Toll-like receptor 4 (TLR4)

Target alternate names:

Target background:

Molecular weight:

Ic50:

Applications

Application:

Application notes: VIPER has been validated preclinically for efficacy, with ongoing work being carried out in disease models. US patent 8,722,052

Handling

Format:

Concentration:

Passage number:

Growth medium:

Temperature:

Atmosphere:

Volume:

Storage medium:

Storage buffer:

Storage conditions:

Shipping conditions: Dry Ice

Related tools

Related tools:

References

References: Wladyka et al., 2015. Sci Rep 28;5:14569. PMID: 26411997