COSMO BIO CO., LTD.
Inspiration for Life Science

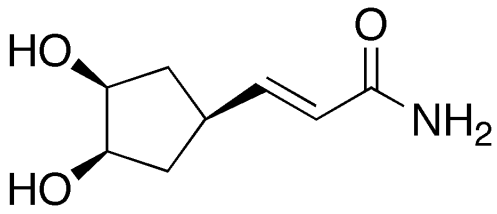
For research use only. Not for clinical diagnosis.

Catalog No. TPS-17

Drosophila Diptericin Inhibitor TPS-17
(E)-3-(c-3,c-4-dihydroxycyclopent-r-1-yl)propenamide

BACKGROUND

Innate immunity comprises evolutionarily conserved self-defense mechanisms against microbial infections. In mammals, innate immunity interacts with adaptive immunity and has a key role in the regulated immune response. Therefore, innate immunity is a pharmaceutical target for the development of immune regulators. Using *Drosophila ex vivo* culture systems (Yajima et al. Biochem. J. 371, 205-210, 2003), a cyclopentanediol analogue is isolated from *Aspergillus sp.* as an immunosuppressive substance (Sekiya et al. Biochem. Pharm. 75, 2165-2174, 2008). This compound selectively suppresses activation of the imd pathway in *Drosophila in vivo* and the target molecules of the compound lie between the Imd adaptor protein and dTAK1 kinase in the imd pathway. In human cells, the compound suppresses TNF-α, but not IL-1β, stimulation-induced activation of NF-κB, suggesting that its target molecules are upstream of TAK1 in mammalian innate immunity. The compound, TPS-17, is developed from the cyclopentanediol analogue (Kikuchi et al. Eur.J.Med.Chem 46. 1263-1273, 2011).

Molecular Formula	$C_8H_{13}NO_3$
Volume	500 ug
Molecular Weight	171.2
CAS No.	924656-08-6
Solubility	DMSO
Structure	
^{1}H NMR	Consistent with structure
Mass Spectrum	Consistent with structure
LCMS	No data

Protocol

The compound is dissolved in DMSO and added to the culture medium.

Experimental data

IC50 value of TPS-17 on the inhibition of the imd pathway in *Drosophila ex vivo* culture system is 3 ug/ml.
TPS-17 does not suppress heat shock-mediated expression of *lacZ* in *Drosophila ex vivo* culture system or *Drosophila* S2 cell viability (ID50 >50 ug/ml).

Storage

Store below -20℃ (below -70℃ for prolonged storag e).
Aliquot to avoid cycles of freeze/thaw.

References

1) M. Yajima, M. Takada, N. Takahashi, H. Kikuchi, S. Natori, Y. Oshima, and S. Kurata: "A Newly Established in Vitro Culture Using Transgenic Drosophila Reveals Functional Coupling between the Phospholipase A2-generated Fatty Acid Cascade and Lipopolysaccharide-dependent Activation of the immune deficiency (imd) Pathway in Insect Immunity" *Biochem. J.*, 371, 205-210 (2003).
2) M. Sekiya, K. Ueda, K. Okazaki, H. Kikuchi, S. Kurata, and Y. Oshima."A Cyclopentanediol Analogue Selectively Suppresses the Conserved Innate Immunity

Pathways, Drosophila IMD and TNF-a Pathways" *Biochem. Pharmacol*., 75, 2165-2174 (2008).

3) H. Kikuchi, K. Okazaki, M. Sekiya, Y. Uryu, Y. Katou, K. Ueda, S. Kurata, Y. Oshima: "Synthesis and innate immunosuppressive effect of 1,2-cyclopentanediol derivatives" Eur.J.Med.Chem 46. 1263-1273 (2011).

For research use only. Not for clinical diagnosis.

COSMO BIO CO., LTD.
Inspiration for Life Science
TOYO 2CHOME, KOTO-KU, TOKYO, 135-0016, JAPAN
URL: http://www.cosmobio.co.jp e-mail: export@cosmobio.co.jp
[Outside Japan] Phone : +81-3-5632-9617 [国内連絡先] Phone : +81-3-5632-9610
FAX : +81-3-5632-9618 FAX : +81-3-5632-9619