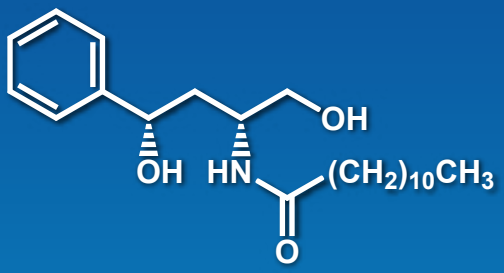
LIFE SCIENCE

Ceramide Transport Protein (CERT) Inhibitor HPA-12

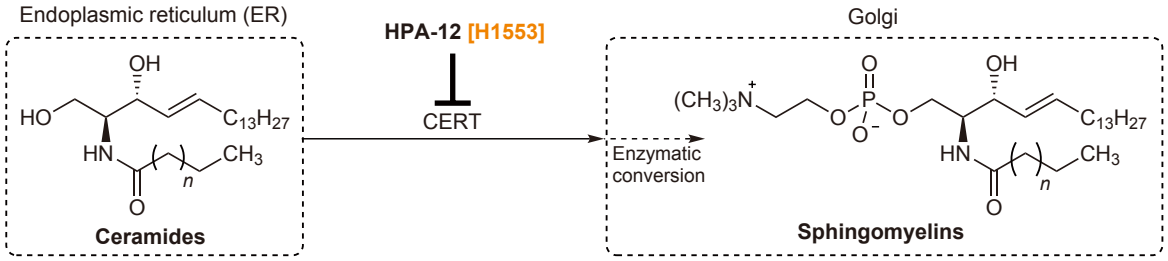


[H1553]

Advantages

- Inhibit hepatitis C virus (HCV) replication and the growth of the obligate intracellular bacteria Chlamydiae
- Induce the resensitization of cancer cells to chemotherapeutic agents

The Inhibition of CERT by HPA-12



CERT-mediated transport to Golgi for further processing to sphingomyelins

HPA-12 is a ceramide (Cer)-trafficking inhibitor that was first discovered and synthesized by Hanada and Kobayashi *et al.*[1,2] Ceramide is synthesized in the endoplasmic reticulum (ER) and is transported to the Golgi apparatus,[3,4] where it is converted to sphingomyelin, by means of the ceramide transport protein (CERT).[5] HPA-12 inhibits the CERT, and has been used as a CERT inhibitor in various biological science studies.[6]

For example, HPA-12 possesses antiviral and antibacterial properties against the growth of hepatitis C virus (HCV) and the obligate intracellular bacteria Chlamydiae in cultured human cells.[6a,d,e] In addition, the CERT inhibition results in resensitization of cancer cells to chemotherapeutic agents such as paclitaxel.[6b] Therefore, the inhibition of CERT may represent medical strategies, such as anti-infective and anticancer chemotherapy.

For Laboratory Use, Research Purposes Only.

References

1) S. Yasuda, S. Kobayashi, K. Hanada, *et. al., J. Biol. Chem.* **2001**, *276*, 43994; (Erratum) **2013**, *288*, 24162.
2) a) M. Ueno, Y.-Y. Huang, A. Yamano, S. Kobayashi, *Org. Lett.* **2013**, *15*, 2869. b) C. Santos, S. Ballereau, Y. Génisson, *et. al., ChemBioChem* **2014**, *15*, 2522.
3) K. Hanada, K. Kumagai, S. Yasuda, Y. Miura, M. Kawano, M. Fukasawa, M. Nishijima, *Nature* **2003**, *426*, 803.
4) K. Hanada, *Biochim. Biophys. Acta* 2014, *1841*, 704; (Corrigendum) **2014**, *1841*, 1561.
5) K. Kumagai, S. Yasuda, K. Okemoto, M. Nishijima, S. Kobayashi, K. Hanada, *J. Biol. Chem.* **2005**, *280*, 6488.
6) a) H. Sakamoto *et. al., Nat. Chem. Biol.* **2005**, *1*, 333. b) C. Swanton, J. Downward, B. Nicke, *et. al., Cancer Cell* **2007**, *11*, 498. c) A. Charruyer, Y. Uchida, *et. al., J. Biol. Chem.* **2008**, *283*, 16682. d) H. Aizaki, T. Suzuki, *et. al., J. Virol.* **2008**, *82*, 5715. e) C. A. Elwell, J. N. Engel, *et. al., PLoS Pathog.* **2011**, *7*, e1002198. f) T. Makiyama, T. Murayama, *et. al., Traffic* **2015**, *16*, 476.

HPA-12 5 mg [H1553]

Ordering and Customer Service

TCI AMERICA
Tel : 800-423-8616 / 503-283-1681
Fax : 888-520-1075 / 503-283-1987
E-mail : Sales-US@TCIchemicals.com

TCI EUROPE N.V.
Tel : +32 (0)3 735 07 00
Fax : +32 (0)3 735 07 01
E-mail : Sales-EU@TCIchemicals.com

TCI Deutschland GmbH
Tel : +49 (0)6196 64053-00
Fax : +49 (0)6196 64053-01
E-mail : Sales-DE@TCIchemicals.com

Tokyo Chemical Industry UK Ltd.
Tel : +44 (0)1865 784560
Fax : +44 (0)1865 784561
E-mail : Sales-UK@TCIchemicals.com

TCI Chemicals (India) Pvt. Ltd.
Tel : 1800 425 7889 / 044-2262 0909
Fax : 044-2262 8902
E-mail : Sales-IN@TCIchemicals.com

梯希爱(上海)化成工业发展有限公司
Tel : 800-988-0390 / 021-67121386
Fax : 021-6712-1385
E-mail : Sales-CN@TCIchemicals.com

TOKYO CHEMICAL INDUSTRY CO., LTD.
Tel : +81 (0)3-5640-8878
Fax : +81 (0)3-5640-8902
E-mail : globalbusiness@TCIchemicals.com