Hee Jae Shin et al., J Pharmacogn Nat Prod 2016, 2:3(Suppl)
http://dx.doi.org/10.4172/2472-0992.C1.003

A new inhibitor of microglial neurotoxicity from marine derived *Streptomyces* species

Hee Jae Shin[1, 2], **Byeoungkyu Choi**[1, 2], **Byung-Wook Kim**[3], **Dong Kug Choi**[3], **Hyi-Seung Lee**[1], **Jong Seok Lee**[1], **Yeon-Ju Lee**[1] and **Jihoon Lee**[1]
[1]Korea Institute of Ocean Science and Technology, Republic of Korea
[2]University of Science and Technology, Republic of Korea
[3]Konkuk University, Republic of Korea

Inflammation in the brain and the rest of the central nervous system (CNS) is a key factor in neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease. Multiple lines of evidence suggest that microglia, the resident immune cells of the CNS; play a critical role in inflammation-mediated neurodegeneration. Microglial cells play a dual role in the central nervous system as they have both neurotoxic and neuroprotective effects. Uncontrolled and excessive activation of microglia often contributes to inflammation-mediated neurodegeneration. As part of our continuing interest to discover secondary metabolites from marine microorganisms; we could isolate a new echinosporin derivative from marine *Streptomyces* sp., possessing strong anti-neuroinflammatory activity as demonstrated by a reduction in nitric oxide (NO) production in LPS-activated BV-2 microglial cells. The structure of the active compound was determined by extensive NMR and mass spectroscopic studies. An unambiguous assignment of the absolute configuration was also achieved by a single-crystal X-ray diffraction (XRD) experiment.

Biography

Hee Jae Shin has received his PhD from the University of Tokyo, where he studied the isolation and structure determination of protease inhibitors from cyanobacteria. He undertook Post-doctoral studies at the Marine Biotechnology Institute, Japan and Scripps Institution of Oceanography with Prof. William Fenical. His research interest is on bioactive marine natural products of marine microorganisms including deep-sea and symbiotic microorganisms.

shinhj@kiost.ac.kr

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