OMICS International
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Kim Jinwoong et al., J Pharma Care Health Sys 2015, 2:4
http://dx.doi.org/10.4172/2376-0419.S1.006

European Pharma Congress

August 25-27, 2015 Valencia, Spain

Three new coumarins from *Saposhnikovia divaricata* and their Porcine Epidemic Diarrhea Virus (PEDV) inhibitory activity

Kim Jinwoong
Seoul National University, Republic of Korea

Swine based agro-industries throughout the world are in big threat of new PEDV infection due to lack of efficient prophylactic defenses as well as dependable curing agents. Bioactivity-guided fractionation of a methanol soluble extract from radix of *Saposhnikovia divaricata* led to the isolation of three new (1–3) together with ten known coumarins (4–13). The structures of new isolates (1–3) were established by extensive spectroscopic analysis and their absolute configurations were assigned based on ECD spectra calculation and analysis. Among all isolates, hyuganin C (5), revealed strongest inhibitory effect on PEDV replication. Quantitative real-time PCR data showed inhibitory effect of 5 on genes responsible for synthesis of PEDV vital structural proteins (GP6 nucleocapsid, GP2 spike, and GP5 membrane) in a dose-dependent manner. Also, compound 5 demonstrated the inhibitory effect on PEDV GP6 nucleocapsid and GP2 spike protein synthesis as analyzed by western blotting. This study represents a new class of chemical entities for developing anti-PEDV agents.

Biography

Kim Jinwoong has completed his PhD under the guidance of A Douglas Kinghorn from University of Illinois at Chicago, USA. He served as the Director of BK21 Applied Pharmaceutical Life Sciences Research Division (2006-2013), Associate Dean (2005-2007) of College of Pharmacy in Seoul National University. He also worked as President in Korean Society of Pharmacognosy. He has published more than 120 SCI(E) papers in reputed journals and has been served as the Editorial Advisory Board Member in *Planta Medica, J. Ethnopharmacology, Drugs of the Future*, and *Anti-Cancer Agents in Medicinal Chemistry*.

jwkim@snu.ac.kr

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