



Press Release

**PharmaEngine Announces ONIVYDE[®] Launched
in the Third Major European Country
- PharmaEngine Eligible to Receive US\$3 Million of Milestone Payment -**

Taipei, Taiwan, July 8, 2018 -- PharmaEngine, Inc. (TWO: 4162) announced that ONIVYDE[®] (liposome irinotecan) has been commercially launched in the third major European country by Shire (PharmaEngine's sublicensee, LSE: SHP, NASDAQ: SHPG). In accordance with the License Agreement entered into as of May 2011 and the subsequent amendment with Ipsen (Euronext: IPN; ADR: IPSEY), PharmaEngine is eligible to receive US\$3 million of milestone payment.

ONIVYDE is indicated, in combination with fluorouracil (5-FU) and leucovorin (LV), for the treatment of patients with metastatic adenocarcinoma of the pancreas after disease progression following gemcitabine-based therapy. The global phase 3 NAPOLI-1 study demonstrated that ONIVYDE in combination with 5-FU/LV extended overall survival, progression-free survival and increased tumor response rate, without compromising quality of life as compared to 5-FU/LV alone in metastatic pancreatic cancer patients who have progressed after gemcitabine-based therapy.

"We are very thankful to the regulatory and marketing teams at Shire for bringing ONIVYDE to more patients in Europe," said C. Grace Yeh, Ph.D., President and CEO of PharmaEngine. "Europe is one of the major markets for ONIVYDE. We expect that more pancreatic cancer patients will benefit from the adoption of ONIVYDE as the best option for second line treatment according to the ESMO Clinical Practice Guidelines (2015)."

About Pancreatic Cancer

Owing to its extremely aggressive nature and poor 5-year survival rate in single digits, pancreatic cancer remains an important public health issue worldwide. Current therapies are designed to control disease and extend survival. According to GLOBOCAN, in 2012, 338,000 people were newly diagnosed with pancreatic cancer, and 331,000 people died from the disease, the seventh leading cause of cancer death in the world. Some projection studies have estimated that pancreatic cancer would escalate from the third to the second leading cause of cancer deaths in the United States by 2020.



Press Release

About ONIVYDE® (irinotecan liposome injection, nal-IRI)

ONIVYDE, also known as nal-IRI, MM-398 or PEP02, is a novel encapsulation of irinotecan in a liposomal formulation. In May 2011, PharmaEngine licensed its Asian and European rights except Taiwan to Merrimack (NASDAQ: MACK). In September 2014, Merrimack licensed the rights to ONIVYDE outside of the US and Taiwan to Baxalta Incorporated (NYSE: BXL), formerly Baxter International's BioScience business, subsequently Baxalta was acquired by Shire (LSE: SHP, NASDAQ: SHPG) in July 2016. Then in April 2017, Ipsen (Euronext: IPN; ADR: IPSEY) acquired the exclusive US commercial rights of ONIVYDE, as well as took over the licensing agreements with Shire and with PharmaEngine from Merrimack. So far, ONIVYDE has been approved in Taiwan, US, EU, Australia, Canada, South Korea and Singapore. It also received orphan drug designations in the US, EU, and other countries.

About PharmaEngine (TWO: 4162)

PharmaEngine, Inc. is a commercial stage oncology company headquartered in Taipei, Taiwan with a wholly owned subsidiary, PharmaEngine Europe Sarl in Paris, France. PharmaEngine focuses on the development of new medications for the treatment of cancer and Asian prevalent diseases. PharmaEngine has three ongoing projects: ONIVYDE (Irinotecan Liposome Injection) has received marketing authorizations in Taiwan, US, Europe and other countries for the treatment of metastatic pancreatic cancer patients who progressed on gemcitabine; PEP503 (NBTXR3) in a positive global pivotal trial of soft tissue sarcoma, and in other cancers; and PEP06 in preclinical development. For further information, please visit PharmaEngine's website at <http://www.pharmaengine.com>.

Contact

Chihsing Chang, Vice President, Finance and Administration

Telephone No.: (+886)-2-2515-8228, ext. 700

Email: chihsing.chang@pharmaengine.com