NEWS RELEASE

NIPPON SHINYAKU CO., LTD.

19th September, 2018

Orphan drug designation granted to NS-73

Nippon Shinyaku Co., Ltd (HQ: Minami-ku, Kyoto, President: Shigenobu Maekawa) announced that the Ministry of Health, Labour and Welfare (MHLW) has granted orphan drug designation to NS-73 (defibrotide sodium) for the treatment of hepatic veno-occlusive disease (VOD, or sinusoidal obstruction syndrome)*1 following hematopoietic stem-cell transplantation. Nippon Shinyaku acquired a license of NS-73 from Jazz Pharmaceuticals plc (HQ: Dublin, Ireland, Chairman & CEO: Bruce C. Cozadd) on March 30, 2017.

An orphan drug designation is granted by the MHLW to drugs with high medical needs which are intended to treat a disease with less than 50,000 patients, and provides several supports including shortened time period for review of application for marketing authorization.

Hepatic veno-occlusive disease occurs when the small blood vessels that lead into or are inside the liver become blocked. Chemotherapy and radiation therapy given during conditioning or intensive therapy before stem cell transplantation can increase the risk of developing VOD. Features of VOD include weight gain, tender hepatomegaly, ascites, and jaundice. In severe cases, VOD can cause multi-organ dysfunction or failure, leading to death in up to 80% of patients.

Defibrotide was approved by the European Medicines Agency (EMA) in 2013 and by the U.S. Food and Drug Administration (FDA) in 2016, as the first approved therapy for the treatment of severe hepatic VOD, a rare and life-threatening liver condition which develops in patients following HSCT. Defibrotide is commercially available in 35 countries. In Japan, Nippon Shinyaku is preparing for its regulatory filing.

Nippon Shinyaku is determined to continue our best efforts in order to deliver the product to patients suffering from VOD as soon as possible.

*1: Hepatic veno-occlusive disease is also known as sinusoidal obstruction syndrome, because hepatic sinusoid is the starting point for injury in this complication.

ABOUT NS-73

NS-73 is a single-stranded nucleic acid polymer derived from porcine intestinal mucosa. It is the first therapy which improves the survival rate of severe hepatic VOD patients by protecting

vascular endothelium and normalizing the coagulation/fibrinolysis balance.

ABOUT JAZZ PHARMACEUTICALS PLC

Jazz Pharmaceuticals plc, established in 2003, is an international biopharmaceutical company with headquarters in Dublin, Ireland. The company is focused on the development and commercialization of products that address debilitating and life-threatening conditions with a focus in the fields of sleep and hematology/oncology. Jazz Pharmaceuticals markets mainly Xyrem® (sodium oybate) oral solution for the treatment of narcolepsy, Erwinaze® (asparaginase Erwinia chrysanthemi) for acute lymphoblastic leukemia, Defitelio® (defibrotide sodium) for the treatment of patients with VOD with renal or pulmonary dysfunction following HSCT, and Vyxeos® (cytarabine and daunorubicin liposome injection) for the treatment of high risk acute myeloid leukemia.