December 24, 2013

ONO PHARMACEUTICAL CO., LTD.
Corporate Communications
Phone: +81-6-6263-5670

ONO Files for Regulatory Approval of "Nivolumab (ONO-4538/BMS-936558)" for Treatment of Malignant Melanoma

Ono Pharmaceutical Co., Ltd. (Head Office: Osaka City; President and Representative Director: Gyo Sagara;"ONO") announced today that ONO filed an application to obtain a manufacturing and marketing approval for fully-human IgG4 PD-1 immune checkpoint inhibitor "Nivolumab (ONO-4538/BMS-936558)" for treatment of malignant melanoma.

Malignant melanoma is considered to be a tumor which develops through malignant transformation of pigment-producing skin cells. In Japan, the prognosis of patients with unresectable malignant melanoma is extremely poor and there is no drug therapy that improves the prognosis significantly , the development of a new drug for the disease has been required.

Nivolumab is a fully-human lgG4 PD-1 immune checkpoint inhibitor. PD-1 is one of the receptors expressed on activated lymphocytes, and is involved in a negative regulatory system to suppress the activated lymphocytes (a negative signal). It has been reported that tumor cells utilize this system to escape from the host immune responses.
Nivolumab is expected to have anti-tumor activity by blocking the interaction of PD-1 with its ligands (PD-L1 and PD-L2), preventing the negative regulatory signal mediated by the receptor (PD-1)-ligand interaction and thereby promoting the host immune response in which tumor cells and viruses are recognized as foreign and eliminated. Nivolumab was designated as an orphan drug indicated for malignant melanoma by Ministry of Health, Labour and Welfare on June 17, 2013.

Nivolumab is a fully-human lgG4 PD-1 immune checkpoint inhibitor generated under a research collaboration agreement entered into in May 2005 between ONO and Medarex, Inc. When Medarex, Inc. was acquired by Bristol-Myers Squibb Company ("BMY") in 2009, BMY succeeded the rights to develop and commercialize Nivolumab in North America.
Under a strategic license agreement enterd into in September 2011 between ONO and BMY, ONO granted BMY exclusive rights to develop and commercialize Nivolumab in the rest of the world, except in Japan, Korea and Taiwan where ONO retained all the rights to develop and commercialize Nivolumab.

"Nivolumab is an antibody drug with a new mechanism of action, which is expected to have efficacy in several cancers including malignant melanoma, non-small-cell lung cancer, and renal cell carcinoma," said Gyo Sagara, the President and Representative Director of ONO. "We are happy to submit a manufacturing and marketing approval for Nivolumab as a drug targeting the PD-1 pathway for the first time in the world. "