

Development Pipeline Progress Status



ONO PHARMACEUTICAL CO.,LTD.

Development status of ONO-4538(nivolumab)①

Development Code	Target Disease	US/EU	KOR/TAI	JAPAN
ONO-4538	Melanoma	Launched (US) Filing (EU)	Filing	Launched
ONO-4538	Melanoma (combination with Ipilimumab)	III	—	—
ONO-4538	Non-small cell lung cancer	Filing	—	—
ONO-4538	Non-small cell lung cancer(2 nd ,3 rd)	III	II (KOR)	II
ONO-4538	Non-small cell lung cancer(1 st)	III	III	III
ONO-4538	Renal cell carcinoma(2 nd ~4 th)	III	—	III
ONO-4538	Renal cell carcinoma(1 st) (combination with Ipilimumab)	III	—	—
ONO-4538	Head and neck carcinoma	III	III	III
ONO-4538	Gastric cancer	I / II	III	III
ONO-4538	Glioblastoma	III	—	—

Development status of ONO-4538(nivolumab)②

Development Code	Target Disease	Overseas	JAPAN
ONO-4538	Diffuse large B cell lymphoma (Non-Hodgkin lymphoma)	II (BMS)	—
ONO-4538	Follicular lymphoma(Non-Hodgkin lymphoma)	II (BMS)	—
ONO-4538	Hodgkin lymphoma	II (BMS)	II
ONO-4538	Esophageal cancer	—	II
ONO-4538	Ovarian cancer(investigator initiated trial)	—	II
ONO-4538	Colon cancer	I / II (BMS)	—
ONO-4538	Pancreatic cancer, Small cell lung cancer, Triple negative breast cancer, Bladder cancer	I / II (BMS)	—
ONO-4538	Hepatocellular carcinoma	I (BMS)	—
ONO-4538	Hematologic malignancies	I (BMS)	—
ONO-4538	Chronic myelogenous leukemia (combination with Dasatinib)	I (BMS)	—

red : Hematologic malignancies

Comprehensive medical treatment for cancer patients

Supportive care

Anticancer drug

Emend/Proemend

nausea and vomiting

ONO-7643

cancer cachexia

Ipilimumab

Melanoma
NSCLC etc.

Lirilumab

(Anti-KIR
antibody)

BMS-986016

(Anti-LAG3
antibody)

Urelumab

(CD137 receptor
agonist)

OPDIVO

(Nivolumab)

Renal cell carcinoma

Melanoma

NSCLC

Hepatocellular carcinoma

Hematologic malignancies

ONO-7057

(Carfilzomib)

Multiple myeloma

ONO-4059

B cell lymphoma

ONO-7058

(ONX0912)

Solid tumor,
Hepatocellular
carcinoma

ONO-7268_{MX1,2}

Hepatocellular
carcinoma etc.

ONO-7056

(Salirasib)

Pancreatic cancer
etc.

Combination clinical trials (OPDIVO & other I-O compounds)

Company	Combination	Cancer type	Phase	Area
BMS	Nivolumab + Ipilimumab	Renal cell carcinoma	III	US, EU
		Melanoma	III	US
BMS	Nivolumab + Lirilumab (Anti-KIR antibody)	Solid tumor	I	US
BMS	Nivolumab + BMS-986016 (Anti-LAG-3 antibody)	Solid tumor	I	US
BMS	Nivolumab + Urelumab (CD137 receptor agonist)	Solid tumor, Non-Hodgkin lymphoma	I / II	US, EU
Kyowa Hakko Kirin	Nivolumab + Mogamulizumab	Solid tumor	—	JP

Global Development Projects

*The most advanced stage is shown

Development Code	Target Disease	Overseas*	JAPAN*
ONO-6950	Bronchial asthma	II	II
ONO-4053	Allergic rhinitis	II	II
ONO-2952	Irritable bowel syndrome (IBS)	II	—
ONO-9054	Glaucoma, Ocular hypertension	II	—
ONO-4059	B-cell lymphoma	I	I
ONO-8055	Underactive bladder	I	—
ONO-8539	Gastroesophageal reflux disease	I	—
ONO-2160	Parkinson's disease	—	I
ONO-1266	Portal hypertension	I	—
ONO-4232	Acute heart failure	I	—

Development pipeline list in Japan (1)

*The most advanced stage is shown

Development code /Product name/Product candidate name	Planned indication	JAPAN
Opalmon (additional formulation)	Thromboangiitis obliterans, Lumbar spinal stenosis	Launched
Rivastach Patch (Additional dosing regimen)	Dementia of the Alzheimer's type	Filing
Proemend (pediatric)	Chemotherapy-induced nausea and vomiting	III
ONO-4164IV (Orencia IV)	Juvenile idiopathic arthritis	III
ONO-4164IV (Orencia IV)	Lupus nephritis	III
ONO-7057 (Carfilzomib)	Multiple myeloma	III
ONO-5163	Secondary hyperparathyroidism	III

Development pipeline list in Japan (2)

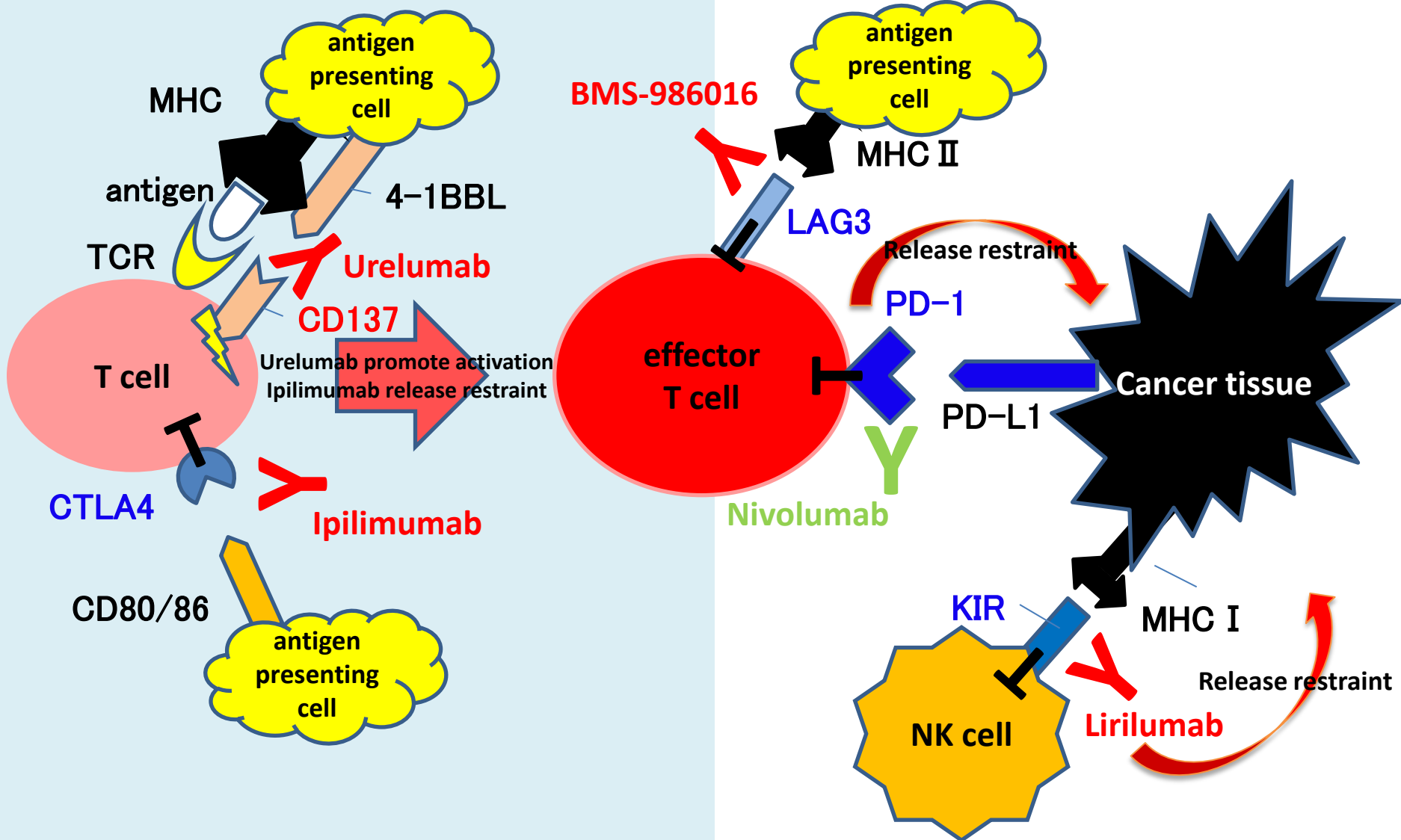
*The most advanced stage is shown

Development code /Product name/Product candidate name	Planned indication	JAPAN
ONO-7643	Cancer cachexia	II
ONO-1162	Chronic heart failure	II
ONO-6950	Bronchial asthma	II
ONO-4053	Allergic rhinitis	II
ONO-7056	Solid Tumor	I
ONO-7268MX1	Hepatic cell carcinoma	I
ONO-7268MX2	Hepatic cell carcinoma	I
ONO-2160 (levodopa pro-drug)	Parkinson's disease	I
ONO-2370 (COMT inhibitor)	Parkinson's disease	I
ONO-4059	B-cell lymphoma	I
ONO-5371	Pheochromocytoma	I

ONO/BMS I-O PROJECT

secondary lymphoid tissue

Cancer tissue



Number of Cancer Patients

Cancer	Incident per year				Mortality per year			
	Japan	Korea	USA	EU	Japan	Korea	USA	EU
Oesophagus	19,683	2,223	16,968	45,983	12,440	1,551	15,982	39,523
Stomach	107,898	31,269	21,155	139,667	52,326	10,746	11,758	107,314
Colorectum	112,675	33,773	134,349	447,136	49,345	9,169	55,259	214,814
Liver	36,168	16,900	30,449	63,462	32,518	12,275	24,312	62,175
Gallbladder	21,417	5,228	9,431	29,744	19,309	4,176	3,845	20,877
Pancreas	32,899	5,379	42,885	103,845	31,046	5,086	41,509	104,535
Larynx	3,615	1,087	12,373	39,921	977	394	3,880	19,772
Lung	94,855	22,873	214,226	410,220	75,119	17,848	167,545	353,723
Melanoma of skin	1,371	649	69,109	100,442	691	263	10,224	22,212
Breast	55,710	17,140	232,714	464,202	13,801	2,274	43,909	131,257
Cervix uteri	9,390	3,299	12,966	58,373	3,645	1,113	6,605	24,385
Corpus uteri	11,449	2,016	49,645	98,984	2,783	291	6,925	23,733
Ovary	8,921	2,349	20,874	65,584	4,986	1,054	15,377	42,737
Prostate	55,970	10,351	233,159	417,137	11,644	1,696	30,383	92,318
Kidney	16,830	5,651	58,222	115,252	8,124	1,264	14,900	48,988
Bladder	22,042	4,097	68,639	151,297	7,630	1,330	16,468	52,395
Brain, nervous	5,510	1,978	21,611	57,132	2,229	1,270	15,746	45,003
Thyroid	9,290	32,992	52,126	52,956	1,764	430	1,965	6,334
Hodgkin lymphoma	1,061	246	8,601	17,584	148	54	1,295	4,622
Non-hodgkin lymphoma	20,978	4,717	63,066	93,518	11,157	1,611	21,732	37,886
Multiple myeloma	4,984	1,317	19,626	38,956	4,334	856	11,978	24,296
Leukaemia	10,182	3,002	39,658	82,329	8,583	1,751	24,729	53,796