

# Development Pipeline Progress Status



ONO PHARMACEUTICAL CO.,LTD.

November 8, 2016

# Development status of OPDIVO (nivolumab) ①

Target disease	JAPAN	US/EU	KR/TW
Melanoma (1 <sup>st</sup> )	Approved	Approved	Approved
Non-small cell lung cancer (2 <sup>nd</sup> ~)	Approved	Approved	Approved *)
Non-small cell lung cancer (1 <sup>st</sup> )	Ⅲ	Ⅲ	Ⅲ
Renal cell carcinoma (2 <sup>nd</sup> ~)	Approved	Approved	Filing (TW)
Renal cell carcinoma (1 <sup>st</sup> ) (combination with Ipilimumab)	Ⅲ	Ⅲ	Ⅲ
<b>Hodgkin lymphoma</b>	Filing	Approved (US) Filing (EU)	-
Head and neck carcinoma	Filing	Filing	Filing (TW) Ⅲ (KR)
Urothelial cancer	Ⅲ	Filing	Ⅲ
Gastric cancer	Ⅲ	Ⅲ	Ⅲ
Gastro-esophageal junction cancer and esophageal cancer	Ⅲ	Ⅲ	Ⅲ
Small cell lung cancer	Ⅲ	Ⅲ	Ⅲ
Hepatocellular carcinoma	Ⅲ	Ⅲ	Ⅲ
Esophageal cancer	Ⅲ	Ⅲ	Ⅲ
Glioblastoma	Ⅲ	Ⅲ	-

\*) : Approved only for squamous NSCLC and under filing for non-squamous NSCLC in Taiwan

Red : Hematologic malignancies    Yellow : Change from the announcement in May 2016

# Development status of OPDIVO (nivolumab) ②

Target Disease	JAPAN	US/EU	KR/TW
<b>Multiple myeloma</b>	-	III	-
<b>Malignant pleural mesothelioma</b>	III	III	-
<b>Ovarian cancer</b>	II	II	II
<b>Central Nervous System Lymphoma, Primary Testicular Lymphoma</b>	II	II	-
<b>Cervix carcinoma, Uterine body cancer, Soft tissue sarcoma</b>	II	-	-
<b>Diffuse large B cell lymphoma (Non-Hodgkin lymphoma)</b>	-	II	-
<b>Follicular lymphoma (Non-Hodgkin lymphoma)</b>	-	II	-
<b>Colon cancer</b>	-	I / II	-
<b>Virus positive/negative solid carcinoma</b>	I / II	I / II	I / II
<b>Pancreatic cancer, Triple Negative Breast cancer (CheckMate-032 study)</b>	-	I / II	-
<b>Biliary tract cancer</b>	I	-	-

# Clinical trials in combination therapy

## OPDIVO (nivolumab) & other I-O compounds ①

Combination therapy	Cancer type	Japan	US/EU	KR/TW
<b>Nivolumab + Ipilimumab</b>	<b>Melanoma</b>	II	Approved	-
	<b>Renal cell carcinoma</b>	III	III	III
	<b>Non-small cell lung cancer</b>	III	III	III
	<b>Small cell lung cancer</b>	III	III	III
	<b>Head and neck cancer</b>	-	III	-
	<b>Gastric cancer</b>	III	III	III
	<b>Malignant pleural mesothelioma</b>	III	III	-

# Clinical trials in combination therapy

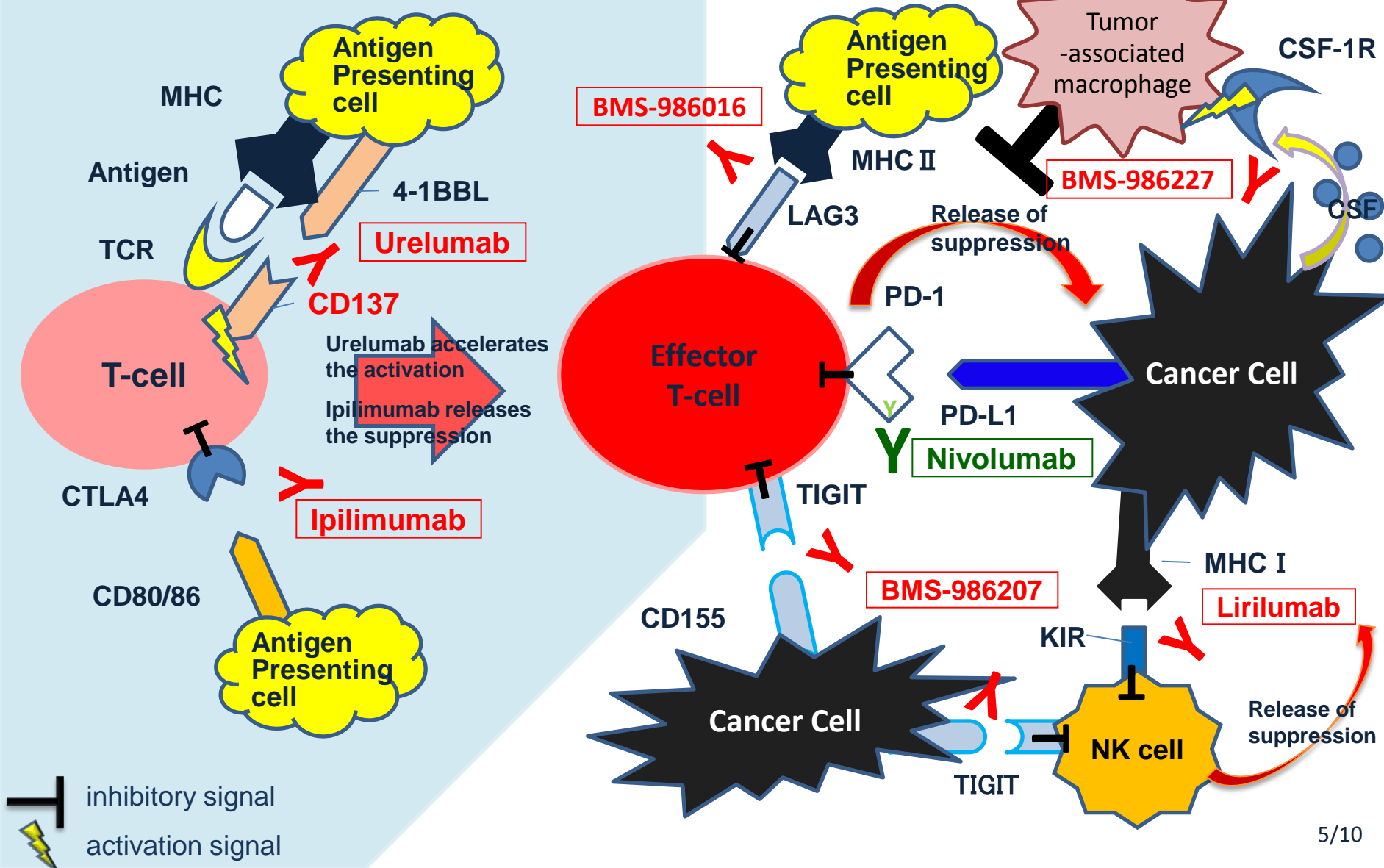
## OPDIVO (nivolumab) & other I-O compounds ②

Combination therapy	Cancer type	Japan	US/EU	KR/TW
<b>Nivolumab + Lirilumab</b> (Anti-KIR antibody)	<b>Solid tumor</b>	-	I / II	-
<b>Nivolumab + BMS-986016</b> (Anti-LAG-3 antibody)	<b>Solid tumor</b>	I	I / II	-
<b>Nivolumab + Urelumab</b> (CD137 receptor agonist)	<b>Solid tumor, Non-Hodgkin lymphoma</b>	I	I / II	-
<b>Nivolumab + Mogamulizumab</b> (Anti-CCR4 antibody)	<b>Solid tumor</b>	I	I	-
<b>Nivolumab + BMS-986207</b> (Anti-TIGIT antibody)	<b>Solid tumor</b>	I (plan)	I	

# ONO&BMS I-O Project

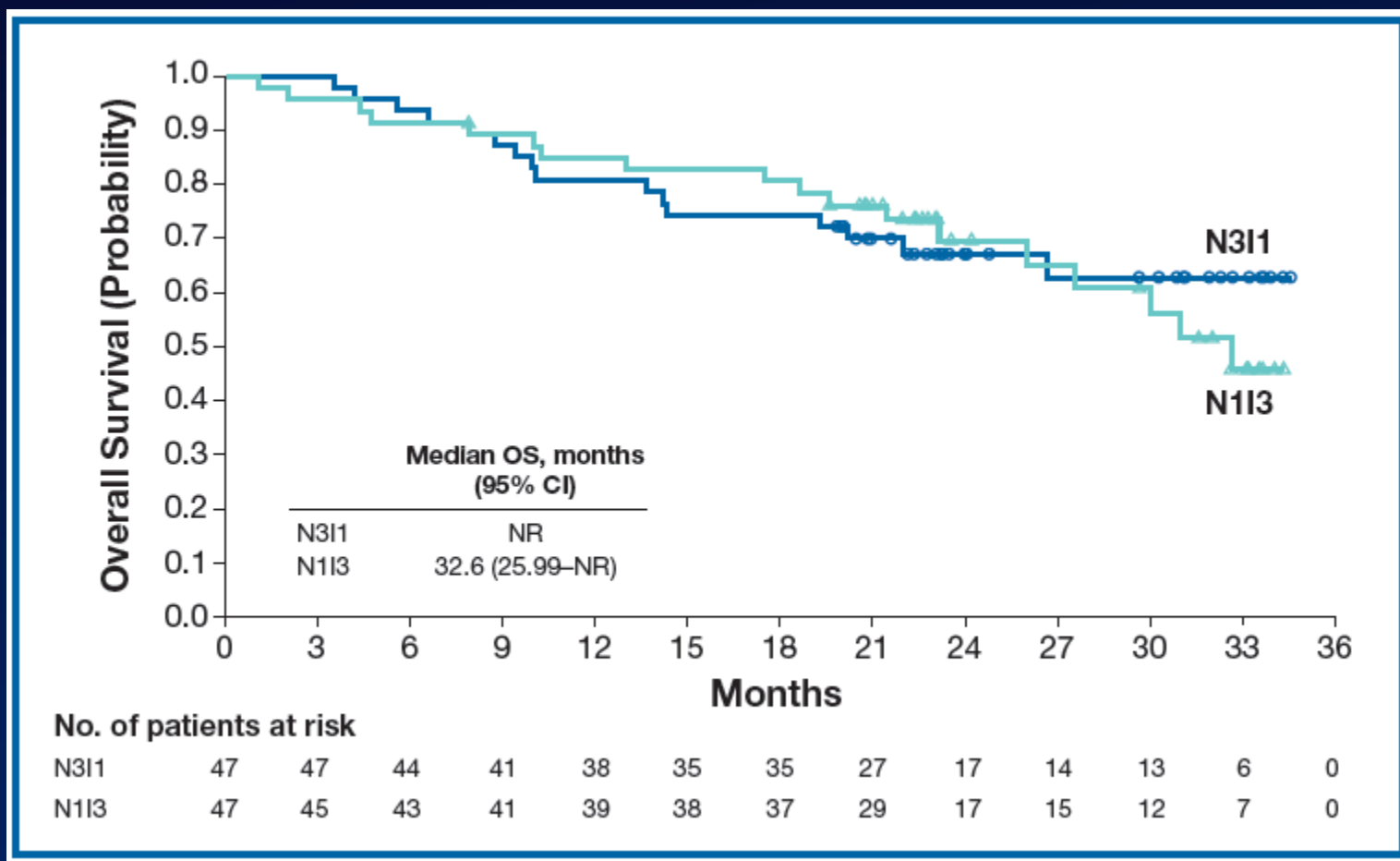
Secondary lymphatic tissue

Cancer tissue



# CheckMate016 study - Renal cell cancer (Nivolumab + Ipilimumab)

## Overall Survival



# Major development pipeline in Japan

Product name/its candidate /development code	Target indication	Japan
Orencia SC (Additional formulaton)	Auto-injector	Approved
KYPROLIS	Multiple myeloma	Approved
ONO-5163	Secondary hyperparathyroidism	Filing
Orencia IV (Pediatric)	Juvenile idiopathic arthritis	III
Orencia IV (Additional indication)	Lupus nephritis	III
ONO-1162	Chronic heart failure	III
ONO-7643	Cancer anorexia/cachexia ( for all types of cancers)	III
Onoact (Pediatric)	Tachyarrhythmia in low cardiac function	II / III
Onoact (Additional indication)	Ventricular arrhythmia	II / III
ONO-2370	Parkinson's disease	II
ONO-5371	Pheochromocytoma	I / II

Yellow : Change from the announcement in May 2016



# ONO-7643/anamorelin (Cancer anorexia/cachexia)

Pharmacological action	Ghrelin minetic
Proposed indication	For the treatment of cachexia; Gain in weight / Improvement of loss of appetite
Development stage	Japan; Phase III Overseas (by Helsinn Therapeutics); Filing in EU (October, 2015)

The result of Phase 2 trial, conducted in Japan, was presented at the 2016 European Society for Medical Oncology (ESMO) Congress held in October. The content was brought up by Daily Reporter of ESMO.

COPENHAGEN 2016 **ESMO** SATURDAY 8 OCTOBER, 2016

FROM DISEASE TREATMENT TO PATIENT CARE

## DAILY REPORTER

ONO-7643/anamorelin associated with significant improvements in cachexia symptoms in Japanese patients with advanced NSCLC

ESMO Congress

### ONO-7643/anamorelin for the treatment of patients with non-small cell lung cancer and cachexia: results from phase 2 study with Japanese patients

J. Uchino, N. Katakami, T. Yokoyama, T. Naito, M. Kondo, K. Yamada, H. Kitajima, K. Yoshimori, K. Sato, Y. Takiguchi, K. Takayama, K. Eguchi

esmo.org

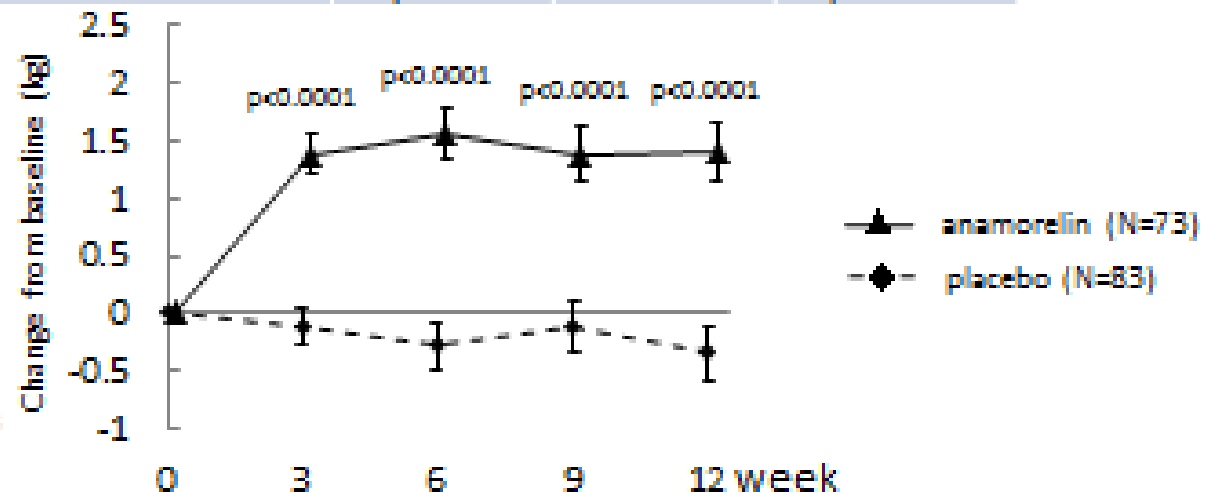


# Main content of P2 trial in Japan ①

Anamorelin increased LBM(Lean Body Mass) of patients of cachexia

## Primary Endpoint : Lean Body Mass

Endpoint	placebo	anamorelin
<b>Lean Body Mass (LBM)</b>		
12-week average change from baseline (kg)	N	83
	LS Mean (SE)	-0.17(0.17)
	95% CI	[-0.50, 0.16]
anamorelin vs. placebo (kg)	LS Mean (SE)	1.56(0.23)
	95% CI	[1.11, 2.00]
	p-value	p<0.0001



# Main content of P2 trial in Japan ②

Anamorelin improved loss of appetite of patients of cachexia

## Physical condition domain of QOL-ACD

*QOL-ACD: Quality of Life Questionnaire for Cancer Patients Treated with Anti-Cancer Drugs<sup>1</sup>*

Physical condition domain

How well did you feel?

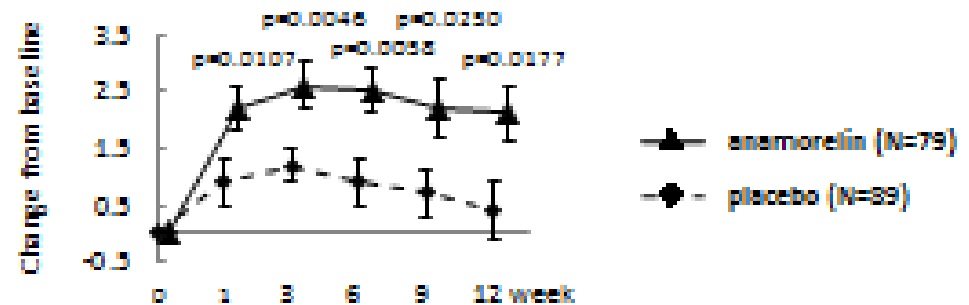
Did you have a good appetite?

Did you enjoy your meals?

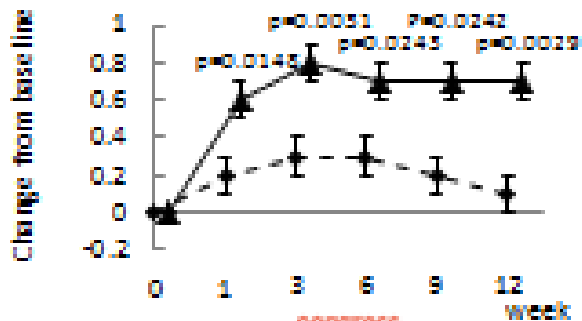
Did you experience any vomiting?

Did you lose any weight?

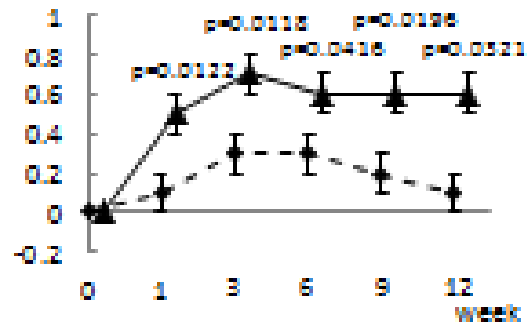
Physical condition domain total



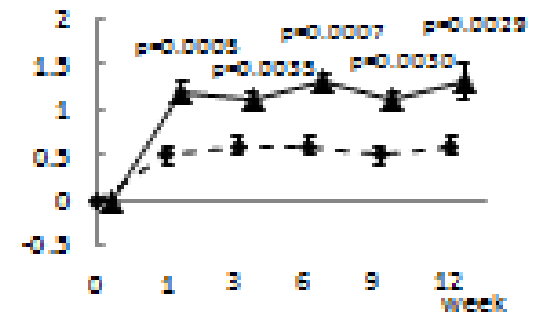
Did you have a good appetite?



Did you enjoy your meals?



Did you lose any weight?



ESMO congress

1. Mabumoto T, 2002