R&D Pipeline (As of Jul 2018)

Underlined items indicate changes from the previous announcement on Apr 26, 2018.

Oncology (1/2)

*Compounds with "In-house" in this column include ones discovered by collaborative research.

Code No. Generic Name (Brand Name)	Classification	Target Disease	Phase / Area	Dosage Form	Licensor*	Focus Area approach
MDV3100 enzalutamide (XTANDI®)	Androgen receptor inhibitor	Non-metastatic castration-resistant prostate cancer	Approved (Jul. 2018) / US Filed (Jan. 2018) / Europe	Oral	Pfizer	
		Non-metastatic hormone-sensitive prostate cancer	P-III / US, Europe, Asia			
		Metastatic hormone-sensitive prostate cancer	P-III / US, Europe, Japan, Asia			
ASP3550 degarelix (GONAX®)	GnRH antagonist	Prostate cancer (3-month formulation)	Filed (Nov. 2017) / Japan	Injection	Ferring	
AMG 103 blinatumomab	Anti-CD19 BiTE antibody	Acute lymphoblastic leukemia	Filed (Jan. 2018) / Japan	Injection	Amgen (co-development with Amgen Astellas)	
ASP2215 gilteritinib	FLT3/AXL inhibitor	Relapsed or refractory acute myeloid leukemia	Filed (Mar. 2018) / US, Japan P-III / Europe, Asia	Oral	In-house	
		Post-chemo maintenance acute myeloid leukemia	P-III / US, Europe, Japan, Asia			
		Post-HSCT maintenance acute myeloid leukemia	P-III / US, Europe, Japan, Asia			
		Newly diagnosed acute myeloid leukemia with low intensity induction of chemotherapy	P-II/III / US, Europe, Japan, Asia			
		Newly diagnosed acute myeloid leukemia with high intensity induction of chemotherapy	P-I / US, Japan			
IMAB362 zolbetuximab	Anti-Claudin 18.2 monoclonal antibody	Gastric and gastroesophageal junction adenocarcinoma	P-III / US, Europe, Japan, Asia	Injection	In-house (Ganymed)	
ASG-22ME enfortumab vedotin	ADC targeting nectin-4	Urothelial cancer	P-III / US, Europe, Japan, Asia	Injection	In-house (co-development with Seattle Genetics)	
AGS-16C3F	ADC targeting ENPP3	Renal cell carcinoma	P-II / US, Europe	Injection	In-house (ADC technology in-licensed from Seattle Genetics)	
AGS67E		Lymphoid malignancies	P-I	Injection	In-house (ADC technology in-licensed from Seattle Genetics)	

Oncology (2/2)

*Compounds with "In-house" in this column include ones discovered by collaborative research.

Code No. Generic Name (Brand Name)	Classification	Target Disease	Phase / Area	Dosage Form	Licensor*	Focus Area approach
AGS62P1		Acute myeloid leukemia	P-I	Injection	In-house (ADC technology, EuCODE license from Ambrx)	
ASP8374/PTZ-201		Cancer	P-I	Injection	Option agreement with Potenza Therapeutics	Biology: Cancer Immunology
ASP1948/PTZ-329		Cancer	P-I	Injection	Option agreement with Potenza Therapeutics	Biology: Cancer Immunology

Updates from the previous announcement (Apr. 2018):
MDV3100 (enzalutamide): Approved in US for non-metastatic castration-resistant prostate cancer in Jul 2018.
ASP1948/PTZ-329: Initiated clinical development for cancer.

Immunology, Muscle disease and Ophthalmology

*Compounds with "In-house" in this column include ones discovered by collaborative research.

Code No. Generic Name (Brand Name)	Classification	Target Disease	Phase / Area	Dosage Form	Licensor*	Focus Area approach
FK506 tacrolimus	Immunosuppressant	Prevention of rejection after organ transplantation (Granule formulation in pediatric use)	Approved (May 2018) / US	Oral	In-house	
ASP015K peficitinib	JAK inhibitor	Rheumatoid arthritis	Filed (May 2018) / Japan	Oral	In-house	
ASKP1240 bleselumab	Anti-CD40 monoclonal antibody	Recurrence of focal segmental glomerulosclerosis in de novo kidney transplant recipients	P-II / US	Injection	Kyowa Hakko Kirin	
ASP4070/ JRC2-LAMP-vax	DNA vaccine for Japanese red cedar	Pollinosis caused by Japanese red cedar	P-II / Japan	Injection	Immunomic Therapeutics	Modality/Technology: LAMP-vax technology
ASP5094	Anti-alpha-9 integrin monoclonal antibody	Rheumatoid arthritis	P-II / Japan	Injection	In-house	
CK-2127107 reldesemtiv	Fast skeletal troponin activator	Spinal muscular atrophy	P-II / US	Oral	Cytokinetics	Biology: Molecular motor
		Chronic obstructive pulmonary disease	P-II / US			
		Amyotrophic lateral sclerosis	P-II / US			
ASP7317	Cell therapy (Retinal pigment epithelium cell)	Dry age-related macular degeneration, Stargardt's macular degeneration	P-II / US	Injection	In-house (Astellas Institute for Regenerative Medicine)	Modality/Technology: Cell therapy
MA-0211		Duchenne muscular dystrophy	P-I	Oral	In-house (Mitobridge)	Biology: Mitochondria
ASP0892		Peanut allergy	P-I	Injection	Immunomic Therapeutics	Modality/Technology: LAMP-vax technology

Update from the previous announcement (Apr. 2018):
FK506 (tacrolimus): Approved in US for prevention of rejection after organ transplantation (granule formulation in pediatric use) in May 2018.
ASP015K (peficitinib): Filed in Japan for rheumatoid arthiritis in May 2018.

Urology and Nephrology

*Compounds with "In-house" in this column include ones discovered by collaborative research.

Code No. Generic Name (Brand Name)	Classification	Target Disease	Phase / Area	Dosage Form	Licensor*	Focus Area Approach
EB178 solifenacin/ mirabegron	Combination therapy of solifenacin and mirabegron	Overactive bladder with symptoms of urge urinary incontinence, urgency, and urinary frequency	Approved (Apr. 2018) / US	Oral	In-house	
YM905 solifenacin	Muscarine M_3 receptor antagonist	Neurogenic detrusor overactivity in pediatric patients	Filed (Feb. 2017) / US	Oral	In-house	
ASP1517/FG-4592 roxadustat	HIF stabilizer	Anemia associated with chronic kidney disease in patients not on dialysis and on dialysis	P-III / Europe P-III / Japan	Oral	FibroGen	
YM178 mirabegron	Beta 3 receptor agonist	Neurogenic detrusor overactivity in pediatric patients	P-III / Europe	Oral	In-house	
YM311/FG-2216	HIF stabilizer	Renal anemia	P-II / Europe P-I / Japan	Oral	FibroGen	
ASP6294	Nerve Growth Factor (NGF) neutralization antibody	Bladder pain syndrome / Interstitial cystitis	P-II / Europe	Injection	In-house	
ASP8302	Muscarine M_3 receptor positive allosteric modulator	Underactive bladder	P-II / Europe, Japan	Oral	In-house	
ASP7713		Underactive bladder	P-I	Oral	In-house	
MA-0217		Acute kidney injury	P-I	Injection	In-house (Mitobridge)	Biology: Mitochondria

Update from the previous announcement (Apr. 2018):
EB178 (solifenacin/mirabegron): Approved in US for the combination use of solifenacin and mirabegron in over active bladder patients obtained in Apr 2018.
ASP8232: Discotinued Phase 2 program for diabetic kidney disease due to strategic prioritization.

Others

*Compounds with "In-house" in this column include ones discovered by collaborative research.

Code No. Generic Name (Brand Name)	Classification	Target Disease	Phase / Area	Dosage Form	Licensor*	Focus Area approach
fidaxomicin	Macrocyclic antibiotic	Infectious enteritis (bacterial target: *Clostridium difficile*)	Approved (Jul. 2018) / Japan	Oral	Merck	
		Clostridium difficile infection in pediatric patients	P-III / Europe			
AMG 785 **romosozumab**	Anti-Sclerostin monoclonal antibody	Osteoporosis for those at high risk of fracture	Filed (Dec. 2016) / Japan	Injection	Amgen (co-development with Amgen Astellas)	
ASP1941 **ipragliflozin** **(Suglat®)**	SGLT2 inhibitor	Type 1 diabetes	Filed (Jan. 2018) / Japan	Oral	In-house (co-development with Kotobuki)	
ASP0456 **linaclotide** **(LINZESS®)**	Guanylate cyclase-C receptor agonist	Chronic constipation	Filed (Sep. 2017) / Japan	Oral	Ironwood	
ESN364 **fezolinetant**	NK3 receptor antagonist	Menopause-related vasomotor symptoms	P-II / US P-I / Japan	Oral	In-house (Ogeda)	
ASP0819	Calcium2+-activated K+ channel opener	Fibromyalgia	P-II / US	Oral	In-house	
ASP4345	Dopamine D_1 receptor positive allosteric modulator	Cognitive impairment associated with schizophrenia	P-II / US	Oral	In-house	
ASP1807/CC8464		Neuropathic pain	P-I	Oral	Chromocell	
ASP6981		Cognitive impairment associated with schizophrenia	P-I	Oral	In-house	
MucoRice-CTB		Prophylaxis of diarrhea caused by *Vibrio cholerae*	P-I	Oral	The Institute of Medical Science, the University of Tokyo	

Updates from the previous announcement (Apr. 2018):

fidaxomicin (Dafclir®): Approved in Japan for infectious enteritis (bacterial target: *Clostridium difficile*) in Jul 2018.
ASP8062: Discontinued Phase 2 program for fibromyalgia because Phase 2 study did not meet its primary endpoint.
MucoRice-CTB: Initiated clinical development for prophylaxis of diarrhea caused by *Vibrio cholerae* .