

R + D pipeline – improvements in quality and focus

Therapeutic area	Project ID	Project/product (generic name)	Pharmacological class	Indication	Phase	Partner
Oncology	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	metastatic breast cancer (1st line) – combo paclitaxel	filed US	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	metastatic colorectal cancer (1st line) – combo extension	filed EU	Genentech
	■ R340	Xeloda (capecitabine)	fluoropyrimidine	metastatic colorectal cancer (1st line) – combo	filed US, EU	
	■ R340	Xeloda (capecitabine)	fluoropyrimidine	metastatic colorectal cancer (2nd line) – combo	filed US, EU	
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	renal cell carcinoma	III, approved EU	Genentech
	■ R435 +	Avastin+Herceptin (bevacizumab+trastuzumab)	anti-VEGF monoclonal antibody + anti-HER2 monoclonal antibody	metastatic breast cancer (1st line) – HER2-positive	III	Genentech
	■ R597	Herceptin (trastuzumab)	anti-HER2 monoclonal antibody	gastric cancer, HER2-positive	III	
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	pancreatic cancer	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	ovarian cancer (1st line)	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	prostate cancer, hormone-refractory	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	metastatic breast cancer (1st line) – combo docetaxel	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	metastatic breast cancer (1st line) – combo standard chemotherapies	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	metastatic gastric cancer	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	adjuvant colon cancer	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	adjuvant non-small cell lung cancer (NSCLC)	III	Genentech
	■ R435 +	Avastin+MabThera (bevacizumab+rituximab)	anti-VEGF monoclonal antibody + anti-CD20 monoclonal antibody	adjuvant breast cancer (HER2-negative)	III	Genentech
	■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	aggressive non-Hodgkin's lymphoma	III	Genentech
	■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	chronic lymphocytic leukemia (1st line)	III	
	■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	chronic lymphocytic leukemia, relapsed	III	Genentech and Biogen Idec
	■ R1415	Tarceva (erlotinib)	EGFR inhibitor	indolent non-Hodgkin's lymphoma – maintenance (1st line)	III	Genentech and Biogen Idec
	■ R1415	Tarceva (erlotinib)	EGFR inhibitor	NSCLC (1st line) – maintenance	III	Genentech and OSI Pharmaceuticals
	■ R1415 +	Tarceva+Avastin (erlotinib+bevacizumab)	EGFR inhibitor + anti-VEGF monoclonal antibody	adjuvant NSCLC	III	Genentech and OSI Pharmaceuticals
	■ R435	Tarceva+Avastin (erlotinib+bevacizumab)	EGFR inhibitor + anti-VEGF monoclonal antibody	NSCLC (1st line) – maintenance	III	Genentech and OSI Pharmaceuticals
	■ R1415 +	Tarceva+Avastin (erlotinib+bevacizumab)	EGFR inhibitor + anti-VEGF monoclonal antibody	NSCLC (2nd line)	III	Genentech and OSI Pharmaceuticals
	■ R435	Xeloda (capecitabine)	fluoropyrimidine	adjuvant breast cancer	III	
	■ R340	Xeloda (capecitabine)	fluoropyrimidine	adjuvant colon cancer – combo oxaliplatin	III	
	■ R340	Xeloda (capecitabine)	fluoropyrimidine	adjuvant colon cancer – combo Avastin	III	
	■ R1273	(pertuzumab)	HER2 dimerisation inhibitor	metastatic breast cancer, HER2-positive (1st line)	II	Genentech
	■ R1273	(pertuzumab)	HER2 dimerisation inhibitor	ovarian cancer	II	Genentech
	■ R1273	(pertuzumab)	HER2 dimerisation inhibitor	adjuvant breast cancer, HER2-positive	II	Genentech
	■ R3502	Trastuzumab-DM1	anti-HER2 monoclonal antibody-cytotoxic conjugate	metastatic breast cancer, HER2-positive	II	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	NSCLC, squamous	II	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	NSCLC with previously treated CNS metastases	II	Genentech
	■ R1415 +	Tarceva+Avastin (erlotinib+bevacizumab)	EGFR inhibitor + anti-VEGF monoclonal antibody	NSCLC (1st line)	II	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	Ewing's sarcoma	II	Genmab
■ R1507		anti-IGF1R monoclonal antibody	non-Hodgkin's lymphoma	I	GlycArt	
■ R7159		3rd-generation anti-CD20 antibody	solid tumours	I		
■ R1530			solid tumours	I		
■ R547			solid tumours	I		
■ R4733			solid tumours	I		
■ R7204		B-raf kinase inhibitor	malignant melanoma	I	Plexxikon	
■ R7112			cancer	I		
Inflammatory and autoimmune diseases	■ R1569	Actemra (tocilizumab)	humanised anti-IL-6 receptor monoclonal antibody	rheumatoid arthritis	filed US, EU, Jpn	Chugai
	■ R1569	Actemra (tocilizumab)	humanised anti-IL-6 receptor monoclonal antibody	systemic onset juvenile idiopathic arthritis	III, filed Jpn	Chugai
	■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	rheumatoid arthritis, DMARD inadequate responders	III	Genentech and Biogen Idec
	■ R1594	(ocrelizumab)	humanised anti-CD20 monoclonal antibody	rheumatoid arthritis	III	Genentech
	■ R1594	(ocrelizumab)	humanised anti-CD20 monoclonal antibody	systemic lupus erythematosus, lupus nephritis	III	Genentech
	■ R99	CellCept (mycophenolate mofetil)	IMPDH inhibitor	pemphigus vulgaris	III	Aspreva
	■ R667		nuclear receptor agonist	emphysema	II	
	■ R3421		PNP inhibitor	autoimmune diseases, transplantation	II	BioCryst
	■ R3477		S1P1 receptor agonist	autoimmune diseases	I	Actelion
	■ R7277		AP-1 inhibitor	rheumatoid arthritis	I	Toyama
	■ R7103			chronic obstructive pulmonary disease	I	
	■ R1671			asthma	I	
	■ R1439	(aleglitazar)	dual PPAR agonist	type 2 diabetes	II	
	■ R1579		DPP-IV inhibitor	type 2 diabetes	II	
	■ R1583		GLP-1 analogue	type 2 diabetes	II	Ipsen (BIM51077)
■ R1658		CETP inhibitor	dyslipidemia	II	Japan Tobacco (JTT-705)	
■ R7201			type 2 diabetes	I	Chugai	
■ R1511		glucokinase activator	type 2 diabetes	I		
■ R4929			type 2 diabetes	I		
■ R7234			type 2 diabetes	I		
■ R1512			peripheral vascular disease	I	Genmab	
■ R7232			dyslipidemia	I		
■ R1663			anticoagulant	I		
■ R744	C.E.R.A. (methoxy polyethylene glycol-epoetin beta)	continuous erythropoietin receptor activator	chemotherapy-induced anemia	II		
Hematology and nephrology	■ R127	Valcyte (valganciclovir)	inhibitor of CMV replication	cytomegalovirus, extension of treatment	III	
	■ R1626		polymerase inhibitor	hepatitis C	II	
	■ R3484		HPV16 vaccine	cervical neoplasia	II	Transgene
	■ R7128		polymerase inhibitor	hepatitis C	I	Pharmasset
	■ R7227		protease inhibitor	hepatitis C	I	InterMune
Central nervous system	■ R1594	(ocrelizumab)	humanised anti-CD20 monoclonal antibody	relapsing remitting multiple sclerosis	II	Genentech
	■ R1450		anti-amyloid β-peptide antibody	Alzheimer's disease	I	Morphosys
	■ R1646			pain	I	
	■ R4996			Alzheimer's disease	I	
	■ R1678			schizophrenia	I	
	■ R1295			multiple sclerosis	I	
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	gastrointestinal stromal tumour	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	adjuvant rectal cancer	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	metastatic breast cancer (2nd line)	III	Genentech
	■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	ovarian cancer (2nd line)	III	Genentech
■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	primary progressive multiple sclerosis	III	Genentech	
■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	lupus nephritis	III	Genentech	
■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	ANCA-associated vasculitis	III	Genentech	
■ R105	MabThera/Rituxan (rituximab)	anti-CD20 monoclonal antibody	systemic lupus erythematosus	III	Genentech	
■ Anti-CD40		anti-CD40 monoclonal antibody	diffuse large B cell lymphoma	II	Genentech	
■ R1524		calcineurin inhibitor	renal transplant	II	Isotechnika (ISA247)	
■ R1668		E2F modulator	solid tumours	II	ArQule (ARQ501)	
■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	glioblastoma multiforme	II	Genentech	
■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	relapsed or refractory multiple myeloma	II	Genentech	
■ R435	Avastin (bevacizumab)	anti-VEGF monoclonal antibody	extensive small-cell lung cancer	II	Genentech	
■	APO2L/TRAIL		cancer	II	Genentech	
■	Apomab		sarcoma	II	Genentech	
■	Apomab		cancer	I	Genentech	
■ Anti-CD40		anti-CD40 monoclonal antibody	non-Hodgkin's lymphoma, multiple myeloma	I	Genentech	
■		MEK inhibitor	cancer	I	Genentech	
■		IAP antagonist	cancer	I	Genentech	
■		3rd-generation anti-CD20 antibody	hematologic malignancies	I	Genentech	
■		hedghog antagonist	cancer	I	Genentech	
■		anti-cMet	cancer	I	Genentech	
■ TP300			colorectal cancer	I	Chugai	
■		anti-IFN alfa	systemic lupus erythematosus	I	Genentech	
■	VAP-1		inflammatory diseases	I	BioTie	
■ NA808			hepatitis C	I	Chugai	
■ R1589			Alzheimer's disease, schizophrenia	II	Memory Pharmaceuticals	
Participation through Chugai	■ AVS	Antevas (nicaraven)	hydroxyl radical scavenger	subarachnoid hemorrhage	filed Jpn	
	■ EPOCH	Epogin (epoetin beta)		chemotherapy-induced anemia	III	
	■ ED-71		activated vitamin D derivative	osteoporosis	III	
	■ GM-611	(mitomycin fumarate)	motilin agonist	gastroparesis, irritable bowel syndrome	II	
Participation through Genentech	■	Lucentis (ranibizumab)	antibody fragment to VEGF	diabetic macular edema	III	
	■	Lucentis (ranibizumab)	antibody fragment to VEGF	retinal vein occlusion	III	
	■	TNKase (tenecteplase)	thrombolytic agent	catheter clearance	III	
	■	Xolair (omalizumab)	anti-IgE antibody	pediatric asthma	III	Novartis
	■	Raptiva (efalizumab)	humanised anti-CD11a monoclonal antibody	renal transplant	II	Merck Serono
	■	ABT-869		solid tumours	II	Abbott
	■	ABT-263		solid tumours and hematologic malignancies	I	Abbott

At the beginning of 2008 the Pharmaceuticals Division's R&D pipeline comprised 115 projects, including 57 new molecular entities (NMEs) and 58 additional indications. Thirty-four NMEs are currently in phase I, 19 in phase II and four in phase III or filed for regulatory review.

Blue type signifies first indication, black type additional indications. Current as of January 2008.

■ Therapeutic protein ■ Small molecule ■ Polypeptide
 ■ Antibody fragment □ Therapeutic vaccine

Phase I: Initial studies in healthy volunteers and possibly in patients
 Phase II: Efficacy, tolerability and dose-finding studies in patients
 Phase III: Large-scale studies in patients for statistical confirmation of safety and efficacy