

Development pipeline (as of July 22, 2010)

Development code	Indication # Additional indication	Stage (date)	Generic name Product name Dosage form	Origin Overseas name (Collaborator)	Mode of Action
<u>Oncology</u>					
RG435	Breast cancer #	Filed Oct. 09	bevacizumab Avastin Injection	Roche Avastin	Humanized anti-VEGF(Vascular Endothelial Growth Factor) monoclonal antibody
	Colon cancer (adjuvant) #	Phase III Multinational study			
	Gastric cancer #	Phase III Multinational study			
	Breast cancer (adjuvant) #	Phase III Multinational study			
	Glioblastoma #	Phase III Multinational study			
	Glioblastoma (relapsed) #	Phase II			
EPOCH	Chemotherapy-induced anemia #	Filed Nov. 09	epoetin beta Epogin Injection	In-house	Recombinant human erythropoietin
RG340	Gastric cancer #	Filed Mar. 10	capecitabine Xeloda Oral	Roche Xeloda	Antimetabolite, 5-FU derivative
RG597	Gastric cancer #	Filed Mar. 10	trastuzumab Herceptin Injection	Roche Herceptin	Humanized anti-HER2 monoclonal antibody
RG1415	Pancreatic cancer #	Filed Sep. 09	erlotinib Tarceva Oral	Roche/OSI Tarceva	EGFR tyrosine kinase inhibitor
	Non-small cell lung cancer (1st line) #	Phase II			
RG1273	Breast cancer	Phase III Multinational study	pertuzumab Injection	Roche	Humanized HER dimerization inhibitory monoclonal antibody
MRA	Pancreatic cancer #	Phase I / II	tocilizumab Actemra Injection	In-house (Roche)	Humanized anti-human IL-6 receptor monoclonal antibody

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TP300	Gastric cancer, etc	Phase II Overseas	Injection	In-house	Topoisomerase I inhibitor
CIF (RG7167)	Solid tumors	Phase I	Oral	In-house (Roche)	MEK inhibitor
		Phase I Overseas			
CKI27 (RG7304)	Solid tumors	Phase I	Oral	In-house (Roche)	Raf and MEK dual inhibitor
		Phase I Overseas			
GC33	Liver cancer	Phase I Overseas	Injection	In-house	Humanized anti-Glypican-3 monoclonal antibody
GA101 (RG7159)	Non-Hodgkin's lymphoma	Phase I	Injection	GlycArt	Humanized anti-CD20 monoclonal antibody
RG3502	Breast cancer	Phase I	Injection	Roche	HER2 antibody-drug conjugate
<u>Bone and Joint diseases</u>					
ED-71	Osteoporosis	Filed Oct. 09	eldecalcitol Oral	In-house (Taisho Pharmaceutical)	Active Vitamin D ₃ derivative
MRA	Systemic onset juvenile idiopathic arthritis (sJIA) #	Phase III Overseas	tocilizumab Actemra / RoActemra(EU) Injection	In-house (Roche)	Humanized anti-human IL-6 receptor monoclonal antibody
	Rheumatoid arthritis (new formulation: subcutaneous injection)	Phase III	tocilizumab Actemra Injection		
RG1594	Rheumatoid arthritis	Phase III Multinational study	ocrelizumab Injection	Roche	Humanized anti-CD20 monoclonal antibody

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RG484	Osteoporosis	Phase II / III	ibandronate sodium hydrate Injection	Roche Boniva (US) / Bonviva (EU) (Taisho Pharmaceutical)	Bisphosphonate
		Phase II	ibandronate sodium hydrate Oral		
Renal diseases					
RG744	Renal anemia	Filed Jul. 09	Injection	Roche Mircera	Continuous erythropoietin receptor activator
Transplant, Immunology and Infectious diseases					
RG964	Compensated liver cirrhosis caused by hepatitis C virus	Phase II / III	ribavirin Copegus Oral	Roche Copegus	Anti-viral agent, in combination with Pegasys
RG442	# Chronic hepatitis B		Phase II / III	peginterferon alfa-2a Pegasys Injection	Roche Pegasys
NA808	Chronic hepatitis C	Phase I	Injection	In-house	Serine palmitoyltransferase inhibitor
		Phase I Overseas			
NTZ	Chronic hepatitis C	Development suspended	nitazoxanide Oral	Romark Laboratories Alinia	Thiazolide compound
Other diseases					
EPOCH	Predeposit of autologous blood transfusion #	Approved Jun. 10	epoetin beta Epogin Injection	In-house	Recombinant human erythropoietin
CSG452 (RG7201)	Type II diabetes	Phase II Multinational study	Oral	In-house (Roche)	SGLT2 inhibitor
RG1583 (ITM-077)	Type II diabetes	Phase II	tasoglutide Injection	Roche/Ipsen (Teijin)	GLP-1 analogue
RG1678	Schizophrenia	Phase II Multinational study	Oral	Roche	GLYT1 inhibitor

Development code	Indication # Additional indication	Stage (date)	Generic name Product name Dosage form	Origin Overseas name (Collaborator)	Mode of Action
RG1450	Alzheimer's disease	Phase I	gantenerumab Injection	Roche/Morphosys	Human anti-amyloid-beta monoclonal antibody

Changes from the last announcement on April 23, 2010

Bone and Joint diseases

-MRA Phase I/II → Phase III (Rheumatoid arthritis (new formulation: subcutaneous injection))

Transplant, Immunology and Infectious diseases

- NTZ Phase I → Development suspended (Chronic hepatitis C)

Other diseases

- EPOCH Filed → Approved (Predeposit of autologous blood transfusion)

R&D Activities (Jan. 1, 2010 – Jul. 22, 2010)

As for clinical development activities in Japan, the Company saw progress as described below:

Oncology

- In March, we filed an application for an additional indication of combination therapy with RG340 (product name: Xeloda), a 5-FU derivative and RG597 (product name: Herceptin), a humanized anti-HER2 monoclonal antibody, for gastric cancer.
- In April, we started a Phase II trial (expected indication: non-small cell lung cancer [1st line]) for an EGFR tyrosine kinase inhibitor, RG1415 (product name: Tarceva).
- In January, we started a Phase I trial (expected indication: solid tumors) for a Raf and MEK dual inhibitor, CKI27 (RG7304).

Bone and Joint diseases

- In May, we started a Phase III trial (new formulation: subcutaneous injection) for a humanized anti-human IL-6 receptor monoclonal antibody, MRA (product name: Actemra).

Transplant, Immunology and Infectious Diseases

- After re-evaluating the allocation of resources to ongoing development programs, we have decided to discontinue our development of nitazoxanide for chronic hepatitis C. Romark Laboratories will continue development of nitazoxanide for chronic hepatitis C in Japan as part of its worldwide development program.

Other Diseases

- In June, we obtained approval for an additional indication of a recombinant human erythropoietin (product name: Epogin), for predeposit of autologous blood transfusion.

At present, we are awaiting the approval of applications (new molecular entities or additions of indications) filed for 7 development themes, including RG435 (expected indication: breast cancer).

Also, as for development activities overseas, the Company saw progress as described below.

- In January, Roche obtained approval for a humanized anti-human IL-6 receptor monoclonal antibody, MRA (product name: Actemra), for rheumatoid arthritis from the U.S. Food & Drug Administration (FDA).

Major clinical trials in oncology field currently running in Japan

Theme	Expected Indication	Regimen	Stage	Planned Filing Date
RG435 (bevacizumab) Avastin	Breast	paclitaxel + RG435	Filed (Oct. 09)	-
	Breast (adjuvant)	standard chemotherapy ± RG435	BEATRICE study : Phase III Multinational study	2013 2015
	Glioblastoma	temozolomide ± RG435	Phase III Multinational study	2013 2015
	Glioblastoma [relapsed]	RG435	Phase II	2013 2015
RG435 (bevacizumab) Avastin RG340 (capecitabine) Xeloda	Colon (adjuvant)	FOLFOX4 ± RG435 XELOX + RG435	AVANT study : Phase III Multinational study	2011
RG1415 (ertotinib) Tarceva	Pancreatic	gemcitabine + RG1415	Filed (Sep. 09)	-
RG597 (trastuzumab) Herceptin RG340 (capecitabine) Xeloda	Gastric	RG340 / 5FU + CDDP ± RG597	Filed (Mar. 10)	-
RG1273 (pertuzumab)	Breast	RG597 + docetaxel ± RG1273	CLEOPATRA study : Phase III Multinational study	2013 2015