


























































































Name	Structure	Reported target	Company	Approved for clinical use	Approval Jurisdiction
Fasudil (Ezil)		ROCK	Chuanwei Eil	cerebral vasospasm PAH	1995 Japan 1995 China
Sunitinib (Rapamune)		mTOR	Wyeth Pfizer	kidney transplantation	1999 FDA 2001 EMA
Imatinib		Bcr-Abl, c-KIT PDGFR	Novartis	chronic myelogenous leukemia, Ph-B-ALL, HES, GIST	2001 FDA 2001 EMA
Gefitinib		EGFR	AstraZeneca	NSCLC	2003 FDA 2009 EMA
Erlotinib		EGFR	OSI Pharmaceuticals	NSCLC pancreatic cancer	2004 FDA 2005 EMA
Sorafenib		VEGFR2, PDGFR, KIT, FLT3, BRAF	Bayer Healthcare	renal cancer HCC	2005 FDA 2006 EMA
Sunitinib		VEGFR, KIT, PDGFR, RET, CSF1R, FLT3	CPPI CV	renal cancer Imatinib resistant GIST	2006 FDA 2006 EMA
Dasatinib		ABL, PDGFR, KIT, SRC	Bristol-Myers Squibb	chronic myelogenous leukemia ALL	2006 FDA 2006 EMA
Lapatinib		EGFR ERBB2	SmithKline Beecham	breast cancer	2007 FDA 2008 EMA
Nilotinib		ABL, PDGFR KIT	Novartis	chronic myelogenous leukemia	2007 FDA 2007 EMA
Temsirolimus		mTOR	PF Prism CV	advanced renal cell carcinoma	2007 FDA 2007 EMA
Everolimus		mTOR	Novartis	RCC, SEGA Transplantation	2009 FDA 2009 EMA
Pazopanib		VEGFR2 PDGFR c-KIT	GlaxoSmithKline	renal cancer	2009 FDA 2010 EMA
Ruxolitinib		JAK2	Incyte Corporation	myelofibrosis with JAK2V617F	2011 FDA 2012 EMA
Vandetanib		RET, VEGFR FGFR, EGFR	IPR Pharmaceuticals	thyroid cancer	2011 FDA 2012 EMA
Vemurafenib		BRAF	Hoffmann La Roche	m-Melanoma with BRAFV600E	2011 FDA 2012 EMA
Crizotinib		ALK, MET	PF Prism CV	NSCLC with ALK translocations	2011 FDA 2012 EMA
Icotinib		EGFR	Betta Pharmaceuticals	NSCLC	2011 China
Axitinib		VEGFR, PDGFR, KIT RET, CSF1R, FLT3	Pfizer	renal cell carcinoma	2012 FDA 2012 EMA
Tofacitinib		JAK3	PF Prism CV	rheumatoid arthritis	2012 FDA 2017 EMA
Bosutinib		ABL	Wyeth Pharmaceuticals	CML resistant/intolerant to therapy	2012 FDA 2013 EMA
Cabozantinib		VEGFR2 PDGFR, KIT FLT3	Exelixis	medullary thyroid cancer	2012 FDA 2014 EMA
Ponatinib		ABL	Ariad Pharmaceuticals	T315 resistant CML	2012 FDA 2013 EMA
Regorafenib		VEGFR2 Tie2	Bayer Healthcare Pharmaceuticals	CRC, GIST	2012 FDA 2013 EMA
Afatinib		EGFR	Boehringer Ingelheim	NSCLC with EGFR mutations	2013 FDA 2013 EMA
Dabrafenib		BRAF	GlaxoSmithKline	m-Melanoma with BRAFV600E	2013 FDA 2013 EMA
Trametinib		MEK	GlaxoSmithKline	m-Melanoma with BRAFV600E	2013 FDA 2014 EMA
Ibrutinib		BTX	Pharmaceuticals Inc	mantle cell lymphoma	2013 FDA 2014 EMA
Nintedanib		VEGFR PDGFR FGFR	Boehringer Ingelheim	idiopathic pulmonary fibrosis	2014 FDA 2014 EMA
Idelalisib		PI3K δ	Gilead Sciences	chronic lymphocytic leukemia	2014 FDA 2014 EMA

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Ceritinib		ALK	Novartis	NSCLC with ALK translocations	2014 FDA, 2015 EMA
Apatinib Rivoceranib		VEGFR2, KIT Src	Elvar	gastric cancer, NSCLC	2014 China
Ripasudil		ROCK1/2	Kowa Company	glaucoma ocular hypertension	2014 Japan
Alectinib		ALK	Roche	NSCLC with ALK translocations	2014 Japan 2015 FDA 2017 EMA
Cobimetinib		MEK1/2	Genentech Elexis	melanoma, breast cancer	2015 FDA 2015 EMA
Lenvatinib		VEGFRs	Eisai	thyroid cancer (DTC) kidney cancer	2015 FDA 2015 EMA
Palbociclib		CDK4/6	Pfizer	advanced (metastatic) breast cancer	2015 FDA 2016 EMA
Radotinib		Bcr-ABL, PDGFR	Ilyang Pharmaceuticals	chronic myelogenous leukemia	2015 S. Korea
Osimertinib		EGFR	AstraZeneca	T790M+ve NSCLC	2015 FDA 2016 EMA
Olumetinib		EGFR	Boehringer Ingelheim	T790M+ve NSCLC	2016 S. Korea
Neratinib		EGFR	Puma Biotechnology	HER2-positive breast cancer	2017 FDA 2018 EMA
Ribociclib		CDK4/6	Novartis	advanced (metastatic) breast cancer HR+, HER2-ve	2017 FDA 2017 EMA
Copanlisib		PI3K mTOR	Bayer	relapsed follicular lymphoma	2017 FDA
Abemaciclib		CDK4/6	Eli Lilly	advanced (metastatic) breast cancer HR+, HER2-ve	2017 FDA 2018 EMA
Acalabrutinib		BTX	AstraZeneca Acerta Pharma	mantle cell lymphoma, CLL	2017 FDA 2020 EMA
Midostaurin		PKC, FLT3	Novartis	acute myeloid leukemia (FLT3 mutation-positive)	2017 FDA 2017 EMA
Brigatinib		ALK T790M EGFR	Ariad Pharmaceuticals	ALK-rearranged metastatic NSCLC	2017 FDA 2018 EMA
Baricitinib		JAK1/2	Incyte Eli Lilly	rheumatoid arthritis	2017 FDA 2017 EMA
Netarsudil		ROCK/NET	Aerie Pharmaceutical	glaucoma/ocular hypertension	2017 FDA 2019 EMA
Tivozanib		VEGFR	EUSA Pharma AVEO Pharmaceutical	advanced RCC	2021 FDA 2017 EMA
Simotinib		EGFR	Jiangsu Simcere Pharmaceutical	solid tumours	2018 China
Fostamatinib		SYK	Rigel Pharmaceuticals	autoimmune thrombocytopenia	2018 FDA 2020 EMA
Encorafenib		mutant BRAF	Array BioPharma	BRAF mutant melanoma	2018 FDA 2018 EMA
Bilimetinib		MEK1/2	Array BioPharma	BRAF mutant melanoma	2018 FDA 2018 EMA
Catequentinib		VEGFRs	Advenchen Laboratories	NSCLC	2018 China
Duvelisib		PI3K δ/γ	Verastem Oncology	CLL, SLL, FL	2018 FDA
Docimatinib		mutant EGFR	Pfizer	NSCLC with EGFR mutations	2018 FDA 2019 EMA
Lorlatinib		ALK	Pfizer	ALK+ve met NSCLC	2018 FDA 2019 EMA
Larotrectinib		TRKs	LOXO Oncology	solid tumours with NTRK fusions	2018 FDA 2019 EMA
Gilteritinib		FLT3, RTKs	Azellas Pharma	acute myeloid leukemia FLT3 mutant	2018 FDA 2019 EMA

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Pyrotinib		EGFR, HER2/4	Jiangsu Hengrui	breast cancer	2018 China
Fruquintinib		VEGFR	Oti-Med Eli Lilly	metastatic colorectal cancer	2018 China
Erdafitinib		FGFRs	Janssen	advanced metastatic urothelial carcinoma	2019 FDA
Alpelisib		PI3Ka	Novartis	breast cancer, HR+ve, HER2-ve	2019 FDA
Umbralisib		PI3Kδ	TG Therapeutic	marginal zone lymphoma	2019 FDA
Leniolisib		PI3Kδ	Novartis	APDS PASU disease	2019 FDA
Pexidartinib		CSF1R, c-KIT FLT3	Daiichi Sankyo	tenosynovial giant cell tumour	2019 FDA
Entrectinib		NTRK1/2/3 ROS1, ALK	Genentech	ROS1+ve NSCLC, solid tumour NTRK+ve	2019 FDA 2020 EMA
Upadacitinib		JAK1	AbbVie	rheumatoid arthritis	2019 FDA, 2019 EMA
Fedratinib		JAK3, FLT3 BRD4	Celgene	myelofibrosis	2019 FDA
Zanubrutinib		BTX	Beigene	mantle cell lymphoma	2019 FDA
Flumatinib		Bcr-ABL PDGFR	Jiangsu Hansoh Pharmaceutical	chronic myelogenous leukemia	2019 China
Peficitinib		JAK	Astellas Janssen	rheumatoid arthritis	2019 Japan
Delgocitinib		JAK	Japan Tobacco	atopic dermatitis	2020 Japan
Avapritinib		mutants KIT PDGFR	Blueprint Medicines	PDGFR exon 18 mutation (incl D842Y)+ve	2020 FDA
Selumetinib		MEK1/2	Astra Zeneca	neurofibromatosis type 1	2020 FDA
Tucatinib		ERBB2	Seattle Genetics	HER2-positive breast cancer	2020 FDA
Pemigatinib		FGFR	Incyte	cholangiocarcinoma with FGFR2 fusion	2020 FDA
Capmatinib Tabrecta		mutant MET	Novartis	MET mutation+ve NSCLC	2020 FDA
Selpercatinib		RET fusions	Eli Lilly	NSCLC, MTC, thyroid cancers	2020 FDA
Ripretinib		KIT, PDGFRA incl mutants	Deciphera Pharmaceuticals	advanced GIST Mastocytosis	2020 FDA
Tirabrutinib		BTX	Ono Gilead	chronic myelogenous leukemia	2020 Japan
Almonertinib		T790M EGFR	Hansoh Pharma	advanced mutation +ve NSCLC	2020 China
Prabretinib		RET	Blueprint Medicines	met RET fusion +ve NSCLC MTC	2020 FDA
Figotinib		JAK1	Gilead Galapagos	rheumatoid arthritis	2020 EMA 2020 Japan
Tirbanibulin		Src, tubulin	Almiral	actinic keratosis	2020 FDA
Orésabrutinib		BTX	InroCare	mantle cell lymphoma CLL, SLL	2020 China
Tepotinib		MET ex 14 alterations	EMD Serono	metastatic NSCLC	2020 Japan 2021 FDA
Trinaclicicb		CDK4/6	G1 Therapeutics	SCLC chemo myelopreservation	2021 FDA