

Supporting Information for

REVIEW

The role of tumor-associated macrophages (TAMs) in tumor progression and relevant advance in targeted therapy

Qiyao Yang^{a,b}, Ningning Guo^a, Yi Zhou^a, Jiejian Chen^b, Qichun Wei^{b,*}, Min Han^{a,*}

^a*Institute of Pharmaceutics, College of Pharmaceutical Sciences, Zhejiang University, Hangzhou 310058, China*

^b*Department of Radiation Oncology, Key Laboratory of Cancer Prevention and Intervention, the Second Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou 310058, China*

*Corresponding authors. Tel.: +86 571 88208437.

E-mail address: qichun_wei@zju.edu.cn (Qichun Wei), hanmin@zju.edu.cn (Min Han).

Table S1 Clinical trials of TAM-targeting agents.

Strategy	Target	Drug	Company (Sponsor)	ClinicalTrial.gov reference	Clinical phase	Tumor type
Inhibition of recruitment of mononuclear macrophages	CCR2 antagonist	CCX-827	University of Rochester	NCT03778879	I/II	Adenocarcinoma; pancreatic neoplasms
			ChemoCentryx	TrialTroveID-291617	II	Pancreatic neoplasms
			ChemoCentryx	NCT02345408	I	Adenocarcinoma; pancreatic neoplasms
		PF-4136309	National Institutes of Health/National Cancer Institute; Washington	NCT01413022	I	Adenocarcinoma; pancreatic neoplasms

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		Pfizer	NCT02732938	I/II	Adenocarcinoma; pancreatic neoplasms
	Carlumab	Johnson & Johnson/Janssen Biotech	NCT01204996	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; liver cancer; melanoma; pancreatic neoplasms; prostatic neoplasms; stomach neoplasms; thyroid neoplasms
		Johnson & Johnson/Janssen Biotech	NCT00992186	II	Prostatic neoplasms
		Johnson & Johnson/Janssen Biotech	NCT00537368	I	Melanoma; ovarian cancer
CCR2, CCR5 antagonist	BMS-813160 (capsule)	Bristol-Myers Squibb; Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins	NCT03767582	I/II	Adenocarcinoma; pancreatic neoplasms
	BMS-813160	School of Medicine; National Institutes of Health; (other hospital/academic/medical center)	NCT03496662	I/II	Adenocarcinoma; pancreatic neoplasms
		Bristol-Myers Squibb	NCT03184870	I/II	Colorectal neoplasms; pancreatic neoplasms
CCR5 antagonist	OB-0020	Orion Biotechnology	TrialTroveID-351127	I	Neoplasms, unknown primary; stomach

					neoplasms
	Leronlimab (SC)	CytoDyn CytoDyn	TrialTroveID-343325 NCT03838367	II I/II	Colorectal neoplasms Breast neoplasms; triple negative breast neoplasms
	Vicriviroc maleate; pembrolizumab	Merck & Co./Merck Sharp & Dohme (MSD)	NCT03631407	II	Colorectal neoplasms
	Maraviroc; pembrolizumab	(Other hospital/academic/medical center) University of Heidelberg; (other hospital/academic/medical center)	TrialTroveID-314475 NCT03274804	I I	Stomach carcinoma Colorectal neoplasms
	Maraviroc (tablet)	(Other hospital/academic/medical center)	NCT01736813	I	Colorectal neoplasms; liver neoplasms; neoplasm metastasis
CSF1R antagonist	MCS110	(Other hospital/academic/medical center) Novartis	NCT03785496 NCT02435680	II II	Carcinoma, squamous cell; esophageal cancer Breast neoplasms; triple negative breast neoplasms
	Pacritinib	University of Michigan Comprehensive Cancer Center	NCT03601819	I	Leukemia, chronic lymphocytic; lymphoma, non-Hodgkin's
	Vorolanib	Bristol-Myers Squibb; Vanderbilt-Ingram Cancer Center; Xcovery	NCT03583086	I/II	Non-small-cell lung cancer; thoracic neoplasms; thymoma
	Cabiralizumab	Bristol-Myers Squibb	NCT03336216	II	Pancreatic cancer

	Bristol-Myers Squibb; Five Prime Therapeutics	NCT02526017	I	Non-small-cell lung cancer; colorectal neoplasms; glioblastoma; head and neck neoplasms; melanoma; ovarian cancer; pancreatic neoplasms; renal cancer
UCB-6352	Syndax	NCT03238027	I	Neoplasm metastasis; neoplasms, unknown primary
IMC-CS4	Eli Lilly; Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins; Merck & Co./Merck Sharp & Dohme (MSD)	NCT03153410	I	Adenocarcinoma; pancreatic cancer
DCC-3014	Deciphera Pharmaceuticals	NCT03069469	I	Acute myelocytic leukemia; breast neoplasms; non-small-cell lung cancer; chronic lymphocytic leukemia; giant cell tumors; ovarian neoplasms; prostatic neoplasms; stomach carcinoma; synovitis, pigmented villonodular
PD-0360324	MD Anderson Cancer Center, University of Texas; National Institutes of Health/National Cancer Institute	NCT02948101	II	Carcinoma, ovarian epithelial; fallopian tube neoplasms; ovarian neoplasms

Emactuzumab	MD Anderson Cancer Center, University of Texas; National Institutes of Health/National Cancer Institute	NCT02923739	II	Adenocarcinoma; Brenner tumor; carcinoma, endometrioid; transitional cell cancer; cystadenocarcinoma; fallopian tube neoplasms; ovarian cancer
	F. Hoffmann-La Roche	NCT02760797	I	Breast neoplasms; colorectal neoplasms; melanoma; mesothelioma; ovarian neoplasms; pancreatic neoplasms; stomach carcinoma
	F. Hoffmann-La Roche	NCT02323191	I	Breast neoplasms; ovarian cancer; soft tissue neoplasms; stomach neoplasms; urinary bladder neoplasms
	F. Hoffmann-La Roche	TrialTroveID-170297	I/II	Neoplasms, unknown primary
	F. Hoffmann-La Roche	NCT01494688	I/II	Breast neoplasms; endometrial neoplasms; mesothelioma; neoplasms, unknown primary; ovarian cancer; pancreatic cancer
Pexidartinib (tablet)	Daiichi Sankyo	NCT02734433	I	Neoplasms, unknown primary
Pexidartinib	Herbert Irving Comprehensive Cancer Center at Columbia University; Daiichi Sankyo/Plexxikon	NCT02584647	I/II	Nerve sheath neoplasms; neurofibrosarcoma; sarcoma; soft tissue neoplasms

Barbara Ann Karmanos Cancer Institute; National Institutes of Health/National Cancer Institute	NCT02472275	I	Adenocarcinoma; prostatic neoplasms
Merck & Co./Merck Sharp & Dohme (MSD); Daiichi Sankyo/Plexxikon	NCT02452424	I/II	Breast neoplasms; non-small-cell lung cancer; carcinoma, squamous cell; colorectal neoplasms; gastrointestinal stromal tumors; head and neck neoplasms; liver cancer; melanoma; ovarian cancer; pancreatic neoplasms; soft tissue neoplasms; stomach carcinoma; urinary bladder neoplasms
Daiichi Sankyo/Plexxikon	NCT01790503	I/II	Glioblastoma; soft tissue neoplasms
Daiichi Sankyo/Plexxikon	NCT01525602	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; head and neck neoplasms; ovarian neoplasms; pancreatic cancer; small cell lung carcinoma; soft tissue neoplasms; stomach neoplasms; urinary bladder neoplasms
Daiichi Sankyo/Plexxikon	NCT01349036	II	Glioblastoma

	Daiichi Sankyo/Plexxikon	NCT01349049	I/II	Acute myelocytic leukemia
	Daiichi Sankyo/Plexxikon	NCT01217229	II	Hodgkin lymphoma
	Susan G. Komen Breast Cancer Research Foundation; Daiichi Sankyo/Plexxikon	NCT01596751	I/II	Breast neoplasms
	Daiichi Sankyo/Plexxikon	NCT01004861	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; endometrial neoplasms; gastrointestinal stromal tumors; Hodgkin lymphoma; osteosarcoma; ovarian neoplasms; pancreatic neoplasms; prostatic neoplasms; soft tissue sarcoma; synovitis, pigmented villonodular; thyroid neoplasms
AMG-820	Amgen; Merck & Co./Merck Sharp & Dohme (MSD)	NCT02713529	I/II	Non-small-cell lung cancer; colorectal neoplasms; pancreatic neoplasms
	Amgen	NCT01444404	I	Breast neoplasms; prostatic neoplasms; urinary bladder neoplasms
Masitinib (tablet)	AB Science	NCT02490488	II/III	Neoplasms; glandular and epithelial; ovarian cancer
	AB Science	NCT03766295	III	Pancreatic cancer

		AB Science	NCT01694277	III	Gastrointestinal stromal tumors
	Sunitinib	AB Science	NCT01280565	III	Melanoma
		MD Anderson Cancer Center, University of Texas; Pfizer	NCT02060370	II	Renal cancer
		National Institutes of Health/National Cancer Institute; Pfizer; University of Pennsylvania	NCT00717587	II	Renal cancer
	IMA-901	Immatics biotechnologies	NCT01265901	III	Renal cancer
	Pazopanib (tablet)	GlaxoSmithKline; Novartis	NCT00720941	III	Renal cancer
CXCR4 antagonist	Plerixafor	Sinopharm A-Think Pharmaceutical Co.	TrialTroveID-308056	I	Lymphoma, non-Hodgkin's
		Sinopharm A-Think Pharmaceutical Co.	TrialTroveID-294594	II	Lymphoma, non-Hodgkin's
		Sanofi/Sanofi Genzyme; Patheon	NCT01767714	III	Lymphoma, non-Hodgkin's
		Sanofi/Sanofi Genzyme	NCT01164475	IV	Lymphoma, non-Hodgkin's
	Plerixafor (IV)	Hunan Wuzhoutong Pharmaceutical Co.	TrialTroveID-306136	III	Lymphoma, non-Hodgkin; multiple myeloma
PI3K γ inhibitor	IPI-549	(Other cooperative group)	NCT03795610	II	Head and neck neoplasms
		Bristol-Myers Squibb; Infinity Pharmaceuticals	NCT03980041	II	Renal cancer
		Infinity Pharmaceuticals; Arcus Biosciences	TrialTroveID-322856	I	Breast neoplasms; ovarian cancer

			Bristol-Myers Squibb; Infinity Pharmaceuticals	NCT02637531	I	Adrenocortical carcinoma; breast neoplasms; non-small-cell lung cancer; head and neck neoplasms; liver cancer; mesothelioma; neoplasms, squamous cell; triple negative breast neoplasms
Eliminating activated TAMs precisely	TRAIL receptor agonist	Duvelisib	Infinity Pharmaceuticals; Verastem Oncology	NCT02391545	I/II	Lymphoma, non-Hodgkin's
		ONC-201	National Institutes of Health/National Cancer Institute; (other hospital/academic/medical center)	NCT02038699	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; endometrial neoplasms; glioblastoma; prostatic neoplasms; triple negative breast neoplasms
		Conatumumab	Amgen	NCT00791011	I	Lymphoma, non-Hodgkin's
	IL4Ra	Dupilumab (SC)	Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins; Regeneron	NCT03886493	II	Prostatic neoplasms
Repolarizing TAMs	TLR4 agonist	ID-CMB305	MD Anderson Cancer Center, University of Texas; National Institutes of Health/National Cancer Institute; Merck & Co./Immune Design	NCT03450122	I	Soft tissue sarcoma
			Merck & Co./Immune Design	NCT03520959	III	Soft tissue sarcoma
		GSK-1795091	GlaxoSmithKline; IQVIA	NCT03447314	I	Head and neck neoplasms

	ID-G100	Merck & Co./Merck Sharp & Dohme (MSD); Merck & Co./Immune Design	NCT02501473	I/II	Lymphoma, non-Hodgkin's
TLR7 agonist	GLAAS	Merck & Co./Immune Design	NCT02035657	I	Carcinoma, Merkle cell
	DSP-0509	Sumitomo Dainippon Pharma {Dainippon Sumitomo}/Boston Biomedical	NCT03416335	I	Unspecified solid tumor
TLR9 agonist	ARB-1598 (intratumoral)	University of Pittsburgh; Checkmate Pharmaceuticals	NCT03618641	II	Melanoma
	Ad5/3-D24-R GD cancer therapy	Targovax	NCT03003676	I/II	Melanoma
		Targovax	NCT01598129	I	Mesothelioma; unspecified solid tumor
	CGTG-102	Targovax	TrialTroveID-126531	I	Unknown primary
		Targovax	TrialTroveID-191306	II	Mesothelioma; ovarian neoplasms; soft tissue neoplasms;
	Lefitolimod	Sanofi	TrialTroveID-155042	I/II	Colorectal neoplasms
Agatolimod (SC)	Pfizer	NCT00824733	II	Breast neoplasms	
1018 ISS (SC)	Dana-Farber/Harvard Cancer Center at Dana Farber Cancer Institute; University of Rochester; James P. Wilmot Cancer Center; Massachusetts General Hospital; Dynavax Technologies; Brigham and Womens Hospital	NCT00251394	II	Lymphoma, non-Hodgkin's	

	IMO-2055	Lombardi Cancer Center at Georgetown University Medical Center; Idera Pharmaceuticals	TrialTroveID-006714	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; melanoma; renal cancer; soft tissue neoplasms
TLR9 agonist, BTK inhibitor	SD-101	National Institutes of Health/National Cancer Institute; Stanford University Medical Center; Johnson & Johnson/Janssen Biotech	NCT02927964	I/II	Lymphoma, non-Hodgkin's
		National Institutes of Health/National Cancer Institute; American College of Radiology Imaging Network	NCT01042379	II	Breast neoplasms
CD40 agonist	APX-005M	Columbia University Medical Center; Apexigen	NCT03719430	II	Sarcoma; soft tissue neoplasms
		Bristol-Myers Squibb; Yale University; Apexigen	NCT03502330	I/II	Non-small-cell lung cancer; lung neoplasms; melanoma; renal cancer
		Apexigen	NCT02482168	I	Non-small-cell lung cancer; carcinoma, transitional cell; head and neck neoplasms; melanoma; renal cancer; urinary bladder neoplasms
	Selicrelumab	F. Hoffmann-La Roche	NCT02760797	I	Breast neoplasms; colorectal neoplasms; melanoma; mesothelioma; ovarian cancer; pancreatic neoplasms; stomach neoplasms

	Chi Lob 7/4	Cancer Research UK; National Health Service (NHS)-UK	NCT01561911	I	Non-small-cell lung cancer; colorectal neoplasms; esophageal cancer; head and neck neoplasms; lymphoma, non-Hodgkin; melanoma; mesothelioma; pancreatic neoplasms
CD47 antagonist	Hu5F9-G4	AstraZeneca/Acerta Pharma Roche/Genentech;	TrialTroveID-349686	I	Lymphoma, non-Hodgkin
		AstraZeneca/Acerta Pharma; Forty Seven	TrialTroveID-348436	I	Lymphoma, non-Hodgkin
		Seattle Genetics; Ono Pharmaceutical; F. Hoffmann-La Roche; Astellas Pharma;	NCT03869190	I/II	Urinary bladder neoplasms
		GlaxoSmithKline/Tesaro; Forty Seven Roche/Genentech	TrialTroveID-317596	I	Urinary bladder neoplasms
		Roche/Genentech; F. Hoffmann-La Roche; Forty Seven	NCT03922477	I	Leukemia, acute myelogenous
		Forty Seven; (other academic cancer center)	NCT03248479	I	Acute myelocytic leukemia; myelodysplastic syndromes
		Forty Seven	NCT02953782	I/II	Breast neoplasms; colorectal neoplasms; head and neck neoplasms; ovarian neoplasms; pancreatic cancer

	Forty Seven; (other industry sponsor)	NCT02953509	I/II	Lymphoma, non-Hodgkin's
	(Other cooperative group); Medical Research Council; Cancer Research UK; Stanford University Medical Center; University of Oxford; (other hospital/academic/medical center); Forty Seven	NCT02678338	I	Leukemia, acute myelogenous; myelodysplastic syndrome
	Forty Seven	NCT02216409	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; head and neck neoplasms; Hodgkin lymphoma; lymphoma, non-Hodgkin; ovarian cancer; pancreatic neoplasms; thyroid neoplasms
IBI-188	Innovent Biologics (Suzhou) Co.	NCT03717103	I	Hodgkin lymphoma; lymphoma, non-Hodgkin
TI-061	Tioma Therapeutics	TrialTroveID-305697	I/II	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; esophageal cancer; liver cancer; melanoma; ovarian cancer; soft tissue neoplasms; stomach neoplasms; urinary bladder neoplasms

	SRF-231	Surface Oncology	NCT03512340	I	Acute myelocytic leukemia; hematologic neoplasms; lymphoma, non-Hodgkin; multiple myeloma; myelodysplastic syndromes; ovarian neoplasms
	SIRPa-Fc (intratumoral)	Trillium Therapeutics	NCT02890368	I	Breast neoplasms; carcinoma, Merkle cell; carcinoma, squamous cell; lymphoma, non-Hodgkin; melanoma; mycoses; soft tissue sarcoma
	SIRPa-Fc (intravenous)	Trillium Therapeutics	NCT02663518	I	Acute myelocytic leukemia; chronic lymphocytic leukemia; Hodgkin lymphoma; lymphoma, non-Hodgkin; multiple myeloma; myelodysplastic syndromes; small cell lung carcinoma
	CC-90002	Celgene	NCT02641002	I	Acute myelocytic leukemia; leukemia; myelodysplastic syndromes
Bruton tyrosine kinase inhibitor	Acalabrutinib	AstraZeneca/Acerta Pharma	TrialTroveID-349686	I	Lymphoma, non-Hodgkin
		National Institutes of Health; AstraZeneca/Acerta Pharma	NCT02337829	II	Chronic lymphocytic leukemia; lymphoma, non-Hodgkin

	Ibrutinib	National Institutes of Health/National Cancer Institute; Mayo Clinic	NCT03015792	I/II	Multiple myeloma
	Ibrutinib (capsule)	AbbVie/Pharmacyclics; Icahn School of Medicine at Mount Sinai	NCT02943473	II	Multiple myeloma
		Johnson & Johnson/Janssen Pharmaceuticals; F. Hoffmann-La Roche	NCT02558816	I/II	Lymphoma, non-Hodgkin's
		Bristol-Myers Squibb; Johnson & Johnson/Janssen R&D	NCT02329847	I/II	Leukemia, chronic lymphocytic; lymphoma, non-Hodgkin's
		AbbVie/Pharmacyclics; Johnson & Johnson/Janssen-Cilag	NCT01779791	II	Lymphoma, non-Hodgkin's
		National Institutes of Health/National Cancer Institute;	TrialTroveID-147956	II	Lymphoma, non-Hodgkin's
		AbbVie/Pharmacyclics			
		AbbVie/Pharmacyclics; Johnson & Johnson/Janssen Pharmaceuticals	NCT01569750	I/II	Lymphoma, non-Hodgkin's
mTOR kinase inhibitor	BGT-226	Novartis	NCT00742105	I	Unspecified solid tumor
	Everolimus	Novartis; Federation Nationale des Centres de Lutte contre le Cancer; F. Hoffmann-La Roche	NCT00674414	II	Breast neoplasms
		National Institutes of Health/National Cancer Institute; Mayo Clinic	NCT02254239	I	Lymphoma, Hodgkin's
		Novartis; Asan Medical Center	NCT01830153	II	Osteosarcoma; soft tissue sarcoma

	Novartis; Winship Cancer Institute of Emory University	NCT01470209	I	Breast neoplasms; non-small-cell lung cancer; colorectal neoplasms; glioblastoma; head and neck neoplasms; lung neoplasms; medulloblastoma; osteosarcoma; ovarian cancer; soft tissue neoplasms; thyroid neoplasms; urinary bladder neoplasms
Sapanisertib	Takeda/Takeda Oncology	NCT03370302	I	Unspecified solid tumor
Vistusertib	National Institutes of Health/National Cancer Institute; Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins (Other hospital/academic/medical center)	NCT03366103	I/II	Lung, small cell; neuroendocrine; unspecified solid tumor
		NCT02730923	I/II	Endometrial; metastatic cancer
	AstraZeneca	NCT02640755	I	Unspecified solid tumor
Vistusertib (tablet)	AstraZeneca	NCT02599714	I/II	Breast neoplasms
Sirolimus	Herbert Irving Comprehensive Cancer Center at Columbia University; Daiichi Sankyo/Plexxikon	NCT02584647	I/II	Soft tissue sarcoma
