

Antibody–drug conjugates come of age in oncology

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Supplementary Table S1: Commercial clinical pipeline of antibody-drug conjugates as of April 1, 2023.											
Company; partner(s)	INN	Drug code(s)	Sequence source, Format	Target(s)	Isotype	Linker	DAR	Payload	Clinical phase initiation year	Indications of all clinical studies	Most advanced phase of clinical development
Sino Biopharmaceutical Limited		TQB2103	mAb	Claudin 18.2		Undisclosed	—	Undisclosed	2023	Advanced malignancies	IND accepted
Mabwell (Shanghai) Bioscience Co., Ltd.		9MW2921	mAb	Undisclosed		Undisclosed	—	TOP1i	2022	Solid tumors	IND active
Luye Pharma Group subsidiary Boan Biotech		BA1301	mAb	Claudin 18.2		Undisclosed	—	Undisclosed	2022	Solid tumors	IND active
Wuxi Zhikang Hongyi / BioCity Pharma		BC3195	mAb	CDH3		Undisclosed	—	MMAE	2023	Solid tumors	IND active
CSPC Pharmaceutical Group Limited		CPO204	mAb	Undisclosed		Undisclosed	—	Undisclosed	2022	Urothelial cancer	IND active
CSPC Pharmaceutical Group Limited		CPO301	mAb	Undisclosed		Undisclosed	—	Undisclosed	2023	Non-small cell lung cancer	IND active
Shanghai Fudan-Zhangjiang Bio-Pharmaceutical Co., Ltd		FZ-AD004	mAb	Trop-2		Undisclosed	—	BB05	2022	Solid tumors	IND active
GeneQuantum Healthcare (Suzhou) Co., Ltd.		GQ1007	mAb	HER2		Stable linker	Site-specific	Undisclosed	2022	Cancer	IND active
Angiex		AGX101	humanized	TM4SF1		Non-cleavable linker	2	Maytansine	2022	Solid tumors	IND submitted
AbbVie		ABBV-011, SC-011	humanized	SEZ6	IgG1	Undisclosed	Site-specific	Calicheamicin	2018	Small cell lung cancer	Phase 1
AbbVie	Mirzotamab clezutoclax	ABBV-155	mAb	B7-H3	IgG1 kappa	Valine-alanine (cleavable linker)	2	Clezutoclax (BCL-XL inhibitor)	2018	Solid tumors	Phase 1
AbbVie		ABBV-400	mAb	cMET		Undisclosed	—	Topoisomerase inhibitor	2021	Non-small cell lung cancer	Phase 1
AbbVie		ABBV-637	mAb	EGFR		Undisclosed	—	BCL-XL inhibitor	2021	Solid tumors	Phase 1
AbbVie		ABBV-706	mAb	SEZ6		Undisclosed	—	Undisclosed	2022	Solid tumors (NCT05599984)	Phase 1
ADC Therapeutics Sarl; Overland ADCT Biopharma	Mipasetamab uzoptirine	ADCT-601	humanized	AXL	IgG1 kappa	Valine-alanine (cleavable linker)	1.96 (Site-specific)	PBD dimer SG3199	2019	Solid tumors	Phase 1
ADC Therapeutics S.A.		ADCT-901 3A4-PL1601	humanized	KAAG-1		Valine-Alanine (Cleavable linker)	—	Pyrrolobenzodiazepine (PBD) dimer SG3199	2021	Solid tumors	Phase 1

Alteogen, Inc; 3SBio Inc		ALT-P7 (HM2-MMAE)	mAb	HER2	IgG1 kappa	Valine-Citrulline (Cleavable linker)	2 (Site-specific)	MMAE	2018	Breast cancer	Phase 1
Multitude Therapeutics Inc.		AMT-151	mAb	Folate receptor alpha		Undisclosed	—	Undisclosed	2022	Solid tumors (NCT05498597)	Phase 1
Ambrx Biopharma Inc.; NovoCodex Pharmaceuticals Ltd.		ARX305	mAb	CD70		Undisclosed	—	Undisclosed	2022	Clear cell renal cell carcinoma	Phase 1
Ambrx		ARX517	humanized	PSMA	IgG1 kappa	Oxime (Non-cleavable linker)	2; Site-specific	Amberstatin 269 (Auroxime)	2021	Prostate cancer	Phase 1
Asana BioSciences		ASN004	mAb	5T4		Fleximer® polymer	15	Auristatin F-hydroxypropyl amide	2022	Solid tumors	Phase 1
Antengene Corporation Limited		ATG-022	mAb	Claudin 18.2		Undisclosed	—	Undisclosed	2022	Solid tumors (CTR20230901)	Phase 1
AstraZeneca		AZD9592	mAb (bispecific)	cMET, EGFR		Undisclosed	—	Undisclosed	2022	Solid tumors (NCT05647122)	Phase 1
Bio-Thera Solutions		BAT8006	humanized	Folate receptor alpha		Cleavable linker	—	Exatecan	2022	Solid tumors	Phase 1
Bio-Thera Solutions		BAT8007	mAb	Nectin-4		Undisclosed	—	Undisclosed	2022	Solid tumors (CTR20222984)	Phase 1
Bio-Thera Solutions		BAT8008	humanized	TROP-2		Undisclosed	—	Exatecan	2022	Solid tumors	Phase 1
Bio-Thera Solutions		BAT8009	humanized	B7-H3		Cleavable linker	—	Exatecan	2022	Solid tumors	Phase 1
Bio-Thera Solutions		BAT8010	mAb	HER2		Cleavable linker	—	Exatecan	2022	Solid tumors	Phase 1
Bliss Biopharmaceutical Co., Ltd.		BB-1701	mAb	HER2		Undisclosed	—	Eribulin	2020	HER2-positive cancers	Phase 1
Sichuan Baili Pharmaceutical Co., Ltd. (subsidiary Systimmune)		BL-M02D1	mAb	Trop-2		Undisclosed	—	Undisclosed	2022	Gastroenteric Tumor, Solid tumors	Phase 1
Sichuan Baili Pharmaceutical Co., Ltd. (subsidiary Systimmune)		BL-M07D1	mAb	HER2		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1

BMS; Sutro Biopharma	Ispectamab debotansine	BMS-986352, CC-99712, SP8919	humanized	BCMA	IgG1 kappa	Dibenzocyclooctyne (DBCO; Noncleavable linker)	4; Site- specific (Y180F)	Debotansine (Dibenzocyclo octyne linker + maytansine)	2019	Multiple myeloma	Phase 1
Byondis B.V.		BYON3521	humanized	cMet (aka hepatocyte growth factor receptor)	IgG1	Valine-Citrulline (maleimide-val-cit- PABC-cyclization spacer; Cleavable linker)	2 (Site- specific)	Duocarmycin	2022	Solid tumors	Phase 1
Shanghai Miracogen Inc.; Keymed Biosciences Inc.		CMG901, MRG005	mAb	Claudin 18.2		Cleavable linker	—	MMAE	2020	Solid tumors	Phase 1
CSPC Pharmaceutical Group Limited		CRB-701, SYS6002	mAb	Undisclosed		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1
LegoChem Biosciences, Inc / ABL Bio; CStone Pharmaceuticals		CS5001, ABL202, LCB71	mAb	ROR1		Cleavable linker	2 (Site- specific)	Pyrrrobenzo diazepine (PBD)	2021	Solid tumors and lymphomas (single Phase 1 study)	Phase 1
Daiichi Sankyo Co., Ltd.		DS-6000	mAb	CDH6 (cadherin 6)		Glycine-Glycine- Phenylalanine- Glycine (GGFG; Cleavable linker)	~8 (Site- specific)	DXd/DX8951 (MAAA- 1181a) (Topoisomera se I inhibitor)	2021	Phase 1 in Renal Cell Carcinoma and Ovarian Tumors	Phase 1
Daiichi Sankyo Co., Ltd.		DS-9606a	mAb	Claudin-6		Undisclosed	—	Undisclosed	2022	Tumor types known to express Claudin-6 (CLDN6)	Phase 1
Hangzhou DAC Biotechnology Co., Ltd.		DXC005	mAb	MUC1		Undisclosed	—	Undisclosed	2021	Cancer	Phase 1
Hangzhou DAC Biotechnology Co., Ltd.		DXC007	humanized	CD33		Undisclosed	—	Tubulysin B analog Tub255	2021	Cancer	Phase 1
Conjupro Biotherapeutics, Inc./CSPC Megalith Biopharmaceutical Co., Ltd; Elevation Oncology, Inc.		EO-3021, SYSA1801, CPO102	human	Claudin 18.2	IgG1	Valine-Citrulline (Cleavable linker)	—	MMAE	2021	Pancreatic and gastric cancers, solid tumors	Phase 1
Shanghai Fudan- Zhangjiang Biopharmaceutical Co.		F0002-ADC, Anti-CD30- MCC-DM1	chimeric	CD30		SMCC (Non- cleavable linker)	3.4	DM1	2018	CD30-positive hematological malignancies	Phase 1
Shanghai Fudan- Zhangjiang Bio- Pharmaceutical Co., Ltd		FDA018	mAb	TROP-2		Undisclosed	—	SN38 (Topoisomera se I inhibitor)	2021	Solid tumors	Phase 1

Genor Biopharma		GB251, Coprelotama b-MMAE	humanized	HER2	IgG1 kappa	Valine-Citrulline (Cleavable linker)	4	MMAE	2017	Breast cancer	Phase 1
GeneQuantum Healthcare (Suzhou) Co., Ltd.		GQ1001 (Trastuzumab -ADC)	humanized	HER2	IgG1 kappa	Patented ring-opened linker	2 (Site-specific)	DM1	2020	HER2-positive advanced solid tumors (NCT04450732)	Phase 1
GeneQuantum Healthcare (Suzhou) Co., Ltd.		GQ1005	mAb	HER2		Stable linker	Site-specific	Undisclosed	2022	Cancer (CTR20222855)	Phase 1
Shanghai Hansoh Biomedical Co., Ltd		HS-20089	mAb	B7-H4		Undisclosed	6	Undisclosed	2022	Solid tumors	Phase 1
Shanghai Hansoh Biomedical Co., Ltd		HS-20093	humanized	B7-H3	IgG1	Undisclosed	—	Undisclosed	2021	Solid tumors	Phase 1
Innovent Biologics (Suzhou) Co. Ltd.		IBI343	mAb	Claudin 18.2		Undisclosed	—	Undisclosed	2022	Solid tumors (NCT05458219)	Phase 1
ImmunoGen		IMGN151	mAb	Folate receptor alpha (biparatopic)		Stable cleavable peptide linker	3.5	DM21	2022	Gynecological solid tumors (NCT05527184)	Phase 1
INATHERYS		INA03	mAb	CD71 (Transferrin receptor 1)		Undisclosed	—	MMAE	2020	Acute leukemia	Phase 1
Novartis		JBH492	mAb	CCR7		Maleimidocaproyl (mc; Non-cleavable linker)	Site-specific	DM4	2020	Relapsed/refractory chronic lymphocytic leukemia and non-Hodgkin's lymphoma	Phase 1
Shanghai Junshi Biosciences Co., Ltd.		JS107	humanized	Claudin 18.2		Undisclosed	—	MMAE	2021	Gastric or pancreatic cancer, solid tumors	Phase 1
Hangzhou DAC Biotech Co Ltd; Shanghai Junshi Bioscience Co Ltd		JS108, DAC-002	humanized	TROP-2		Undisclosed	—	Tubulysin 196	2019	Cancer	Phase 1
Alphamab (Australia) Co Pty Ltd.		JSKN003	mAb (bispecific)	HER2, HER2 (biparatopic)		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1
Merck KGaA		M1231	mAb (Fab-Fc-scFv, bispecific)	MUC1, EGFR		Valine-Citrulline (Cleavable linker)	4 (Site-specific)	SC209 (Hemiasterlin)	2021	Solid tumors	Phase 1
EMD Serono Research & Development Institute, Inc.		M9140	mAb	CEACAM5		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1
Menarini Ricerche; Oxford BioTherapeutics		MEN1309, OBT076	human	CD205	IgG1	SPDB (Cleavable linker)	3.7	DM4	2017	Breast cancer, solid tumors, non-Hodgkin's lymphoma	Phase 1
Shanghai Miracogen Inc.		MRG001	chimeric	CD20		Valine-Citrulline (Cleavable linker)	—	MMAE	2018	Non-Hodgkin lymphoma	Phase 1
Mythic Therapeutics		MYTX-011	mAb	cMet (aka hepatocyte		Undisclosed	—	MMAE	2022	Non-small cell lung cancer (NCT05652868)	Phase 1

				growth factor receptor)							
NewBio Therapeutics		NBT508	mAb	CD79b		Proprietary site-specific linker (TetraM; Cleavable linker)	2; Site-specific	MMAE	2021	Lymphoma	Phase 1
NewBio Therapeutics		NBT828	humanized	HER2	IgG1 kappa	Proprietary site-specific linker (BiM; Cleavable linker)	4; Site-specific	MMAE	2018	Breast cancer	Phase 1
Pfizer; AbbVie	Cofetuzumab peliodotin	PF-06647020, PTK7-ADC, ABBV-647, PTK7-Aur0101	humanized	PTK7	IgG1 kappa	Val-Cit-PABC (Cleavable linker)	4	Aur0101 (aka PF-06380101)	2014	Non-small Cell Lung Cancer, Solid tumors, triple-negative breast cancer	Phase 1
Pfizer; Pyxis Oncology		PYX-201	mAb	Extracellular domain-B (EDB) fibronectin		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1
RemeGen		RC108	mAb	cMET		Undisclosed	—	MMAE	2021	c-Met Positive Advanced Malignant Solid Tumors	Phase 1
Seagen Inc.		SGN-ALPV	humanized	ALPP and ALPPL2	IgG1	Protease-cleavable peptide linker	—	MMAE	2021	Solid tumors	Phase 1
Seagen Inc.		SGN-B6A	mAb	Integrin beta 6		Valine-Citrulline (Cleavable linker)	4	MMAE	2020	Solid tumors	Phase 1
Seagen Inc.		SGN-B7H4V	human	B7-H4	IgG1	Valine-Citrulline (Cleavable linker)	—	MMAE	2022	Solid tumors	Phase 1
Seagen Inc.		SGN-CD228A	humanized	CD228	IgG1	β -glucuronidase (BG; Cleavable linker)	8 (Site-specific)	MMAE	2019	Solid tumors	Phase 1
Seagen Inc.		SGN-PDL1V	mAb	PD-L1		Valine-Citrulline (Cleavable linker)	—	MMAE	2022	Solid tumors	Phase 1
Seagen Inc.		SGN-STNV	mAb	Sialyl Thomsen-nouveau (STn)		Valine-Citrulline (Cleavable linker)	—	MMAE	2020	Solid tumors	Phase 1
Shanghai Hengrui Pharmaceutical Co., Ltd.		SHR-A1912	mAb	CD79b		Undisclosed	—	Undisclosed	2021	B cell lymphomas	Phase 1
Jiangsu HengRui Medicine Co., Ltd.		SHR-A2009	mAb	Undisclosed		Undisclosed	—	Undisclosed	2021	Solid tumors	Phase 1
Shanghai Hengrui Pharmaceutical Co., Ltd.		SHR-A2102	mAb	Undisclosed		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1
Sichuan Kelun Pharmaceutical Research Institute Co., Ltd.		SKB315	mAb	Claudin 18.2		Stable linker	Site-specific	Topoisomerase I inhibitor	2022	Solid tumors	Phase 1

TORL Biotherapeutics, LLC		TORL-1-23	mAb	Claudin 6		Cleavable linker	—	MMAE	2021	Advanced cancer	Phase 1
TORL Biotherapeutics, LLC		TORL-2-307-ADC, TORL-2-307-MAB	mAb	Claudin 18.2		Cleavable linker	—	MMAE	2021	Advanced cancer	Phase 1
Sino Biopharmaceutical Limited		TQB2102	mAb	HER2		Undisclosed	—	Topoisomerase I inhibitor	2022	Advanced cancer (NCT05735496)	Phase 1
Tanabe Research Laboratories U.S.A. Inc.		TR1801-ADC, MT-8633	humanized	cMet (aka hepatocyte growth factor receptor)	IgG2 kappa	Valine-Alanine (Cleavable linker)	2 (Site-specific)	Pyrrolobenzodiazepine dimer SG3199	2019	Solid tumors	Phase 1
Triphase Accelerator Corp; BMS		TRPH222, CAT-02-106	humanized	CD22	IgG1	HIPS-4AP (SMARTag™; Non-cleavable)	2; Site-specific	DM1	2018	B-cell lymphoma	Phase 1
Zhejiang Teruisi Pharmaceutical Inc.		TRS005, Rituximab ADC	chimeric	CD20		Valine-Alanine (mc-vc-PABC; Cleavable linker)	4.2	MMAE	2018	Non-Hodgkin's lymphoma	Phase 1
Iconic Therapeutics; Exelixis, Inc.		XB002, XB-002, ICON-2	human	Tissue Factor (aka CD142)		ZymeLink™ linker-payload (Cleavable linker)	3.3	ZymeLink Auristatin	2021	Solid tumors	Phase 1
Mersana Therapeutics		XMT-1660	mAb	B7-H4		Undisclosed	6	Dolasynthen	2022	Solid tumors	Phase 1
Sihuan Pharmaceutical Holdings Group Ltd.		XZP-KM501	mAb (bispecific)	HER2, HER2 (biparatopic)		Undisclosed	—	Undisclosed	2023	Solid tumors (CTR20230726)	Phase 1
MediLink Therapeutics		YL201	mAb	Undisclosed		Tumor Microenvironment Activable Linker	—	Undisclosed	2022	Solid tumors	Phase 1
MediLink Therapeutics (Suzhou) Co., Ltd.		YL202	mAb	Undisclosed		Undisclosed	—	Camptothecin Derivatives (Topoisomerase I Inhibitors)	2022	Non-small cell lung cancer and breast cancer (single Phase 1)	Phase 1
Hangzhou Adcoris Biopharmacy Co., Ltd		ZV0203, ZV0203-ADC	humanized	HER2		Undisclosed	—	Duostatin5	2021	HER2-positive solid tumors	Phase 1
Zymeworks; BeiGene	Zanidatamab zovodotin	ZW49	mAb (Fab-Fc-scFv, bispecific)	HER2, HER2 (biparatopic)	IgG1 kappa	Valine-citrulline (1-maleimido-3,6,9-trioxadodecan-12-oyl-valyl-citrullyl cleavable linker)	2.1	Auristatin	2018	HER2+ tumors	Phase 1
Shanghai Fudan-Zhangjiang Bio-Pharmaceutical Co., Ltd		FDA022	mAb	HER2		Undisclosed	—	BB05	2022	HER2+ solid tumors (NCT05564858)	Phase 1 pending
Innovent Biologics (Suzhou) Co. Ltd.		IBI354	mAb	HER2		Undisclosed	—	Camptothecin derivative	2022	Solid tumors (NCT05636215)	Phase 1 pending

Iksuda Therapeutics		IKS03	mAb	CD19		Tumor-cleavable linker	2 (Site-specific)	Pyrrolobenzo diazepine prodrug	2022	Non-Hodgkin's lymphoma (NCT05365659)	Phase 1 pending
Minghui Pharmaceutical Pty Ltd		MHB088C	humanized	B7-H3		Protease-hydrolyzable linker	—	DNA topoisomerase I inhibitor	2022	Solid tumors (NCT05652855)	Phase 1 pending
Mabwell (Shanghai) Bioscience Co., Ltd.		9MW2821	mAb	Nectin-4		Undisclosed	Site-specific	Undisclosed	2022	Solid tumors	Phase 1/2
CytomX Therapeutics; AbbVie		ABBV-2029, CX-2029	human	CD71	IgG1	Valine-Citrulline (Cleavable linker)	2	MMAE	2018	B-cell lymphoma	Phase 1/2
ADC Therapeutics Sarl; Overland ADCT Biopharma	Epratuzumab-ADC	ADCT-602	humanized	CD22	IgG1	Valine-alanine (Cathepsin-cleavable dipeptide linker)	1.7; Site-specific	Pyrrolobenzo diazepine (PBD) dimer SG3199	2018	B-cell lymphoblastic leukemia	Phase 1/2
AstraZeneca		AZD5335	mAb	Folate receptor alpha		Undisclosed	—	Topoisomerase I inhibitor	2023	Solid tumors (NCT05797168)	Phase 1/2
AstraZeneca		AZD8205	human	B7-H4		Valine-alanine (Cleavable linker)	—	Topoisomerase I inhibitor	2021	Advanced solid tumors (NCT05123482)	Phase 1/2
Bliss Biopharmaceutical (Hangzhou) Co., Ltd		BB-1705	humanized	EGFR	IgG1 kappa	Valine-Citrulline (Cleavable linker)	2	Eribulin	2022	Solid tumors (NCT05217693)	Phase 1/2
Boehringer Ingelheim (acquired NBE-Therapeutics AG)		BI-3702025, NBE-002, huXBR1-402-PNU	mAb	ROR1	IgG1	Non-cleavable linker	Site-specific	PNU-159682 (anthracycline)	2020	Advanced solid tumors	Phase 1/2
BiOneCure Therapeutics Inc.		BIO-106	mAb	TROP-2		Undisclosed	—	TAM	2022	Advanced cancer	Phase 1/2
Sutro Biopharma; BioNova Pharma		BN301, STRO-001	human	CD74	IgG1	Dibenzocyclooctyne (DBCO; Non-cleavable linker)	2 (Site-specific)	Maytansine	2018	B-cell malignancies (NCT05611853)	Phase 1/2
Duality Biologics		DB-1202	mAb	Undisclosed		Undisclosed	—	Undisclosed	2023	Solid tumors	Phase 1/2

Duality Biologics		DB-1303	mAb	HER2		Enzymatically cleavable peptide linker	—	P1003 topoisomerase I inhibitor	2021	Solid tumors	Phase 1/2
Duality Biologics		DB-1305	mAb	Undisclosed		Undisclosed	—	Undisclosed	2022	Solid tumors	Phase 1/2
DualityBio Inc.		DB-1310	mAb	HER3		Undisclosed	—	Undisclosed	2023	Solid tumors (NCT05785741)	Phase 1/2
Shanghai Escugen Biotechnology Co, Ltd; Levena (Suzhou) Biopharma Co., Ltd.		ESG-401, STI-3258	humanized	TROP-2		Undisclosed	—	SN38 (Topoisomerase I inhibitor)	2021	Solid tumors	Phase 1/2
Fortis Therapeutics		FOR46	human	CD46	IgG1	Valine-Citrulline (mc-val-cit-PAB linker)	3.7	MMAE	2018	Multiple myeloma, prostate cancer	Phase 1/2
Heidelberg Pharma /Wilex		HDP-101	mAb	BCMA		Valine-Citrulline (Cleavable linker)	2 (Site-specific)	Amanitin	2021	Multiple myeloma	Phase 1/2
MacroGenics, ImmunoGen	Izeltabart tapatansine	IMGC936, AEX6003 (S442C)-DGN549	humanized	ADAM-9	IgG1 kappa	Ala (L)-Ala (D)-Ala (L) (Stable tripeptide linker)	2 (Site-specific)	DM21	2020	ADAM-9 positive solid tumors including non-small cell lung, pancreatic, gastric, and triple negative breast cancer	Phase 1/2
LaNova Medicines Ltd		LM-102	humanized	Claudin 18.2	IgG1	Valine-Citrulline (Cleavable linker)	—	MMAE	2021	Solid tumors	Phase 1/2
Shanghai Miracogen Inc.; Shanghai Miyake; Lepu Biopharma		MRG004A	mAb	Tissue factor (aka CD142)		Valine-Citrulline (BCN-valyl-citrulline; Protease-cleavable linker)	—	MMAE	2020	Solid tumors	Phase 1/2
OBI Pharmaceuticals		OBI-999	mAb	Globo H		Valine-Citrulline (Cleavable linker)	4; Site-specific	MMAE	2019	Solid tumors	Phase 1/2
ProfoundBio (Suzhou) Co., Ltd		PRO1184	mAb	Folate receptor alpha		Proprietary hydrophilic linker (Cleavable)		Exatecan (topoisomerase 1 inhibitor)	2022	Solid tumors (NCT05579366)	Phase 1/2
Biocytogen; RemeGen		RC118, RC118-ADC, YH005	humanized	Claudin 18.2		Undisclosed	—	MMAE	2021	Solid tumors	Phase 1/2
RemeGen		RC88	mAb	Mesothelin		Undisclosed	—	MMAE	2020	Solid tumors (NCT04175847)	Phase 1/2
Regeneron Pharmaceuticals		REGN5093-M114	human (bispecific)	cMet, cMet		Valine-Citrulline (Cleavable linker)	3.2	M24 (Maytansinoid)	2021	Non-small cell lung cancer	Phase 1/2
Shanghai Hengrui Pharmaceutical Co., Ltd.		SHR-A1904	humanized	Claudin 18.2		Undisclosed	—	Undisclosed	2021	Pancreatic cancer, Solid tumors	Phase 1/2
SOTIO Biotech; NBE-Therapeutics		SOT102, SO-N102	mAb	Claudin 18.2		Pentaglycine-EDA (Non-cleavable)	2 (Site-specific)	PNU-159682 (Anthracycline)	2022	Gastric and pancreatic cancer	Phase 1/2

Sorrento Therapeutics, Inc.		STI-6129, LND51001	human	CD38		Undisclosed	Site-specific	Duostatin 5.2 (Auristatin)	2020	Multiple myeloma, amyloid light-chain amyloidosis, solid tumors	Phase 1/2
LaNova Medicines Ltd; Turning Point Therapeutics, Inc.		TPX-4589, LM-302	humanized	Claudin 18.2	IgG1	Valine-Alanine (Cleavable linker)	—	MMAE	2021	Solid tumors	Phase 1/2
Pierre Fabre	Lonigutamab ugodotin	W0101	humanized	IGF-1R	IgG1 kappa	Maleimidocaproyl (mc; Non-cleavable linker)	4	Dolastatin; Auristatin derivative F554443	2017	Solid tumors	Phase 1/2
LaNova Medicines Limited		LM-305	mAb	GPRC5D		Undisclosed	—	Undisclosed	2022	Multiple myeloma	Phase 1/2 pending
Minghui Pharmaceutical Pty Ltd		MHB036C	mAb	TROP2		Undisclosed	—	MH30010008	2022	Solid tumors (NCT05642949)	Phase 1/2 pending
ProfoundBio (Suzhou) Co., Ltd		PRO1160	mAb	CD70		Proprietary hydrophilic linker (Cleavable)	—	Exatecan (topoisomerase 1 inhibitor)	2022	Solid tumors and lymphomas (NCT05721222)	Phase 1/2 pending
Shanghai Hengrui Pharmaceutical Co., Ltd.; Suzhou Suncadia Biopharmaceuticals Co., Ltd.		SHR-A1921	mAb	TROP-2		Undisclosed	—	Undisclosed	2021	Solid tumors (NCT05765032), B cell lymphoma	Phase 1; Phase 1/2 pending
Sutro Biopharma; Tasly Biopharmaceuticals Co., Ltd.	Luveltamab tazevibulin	STRO-002	human	Folate receptor alpha	IgG1 kappa	Valine citrulline p-aminobenzyl carbamate linker functionalized with dibenzocyclooctyne (DBCO) (Cleavable linker)	4; Site-specific (Y180F)	SC209 (Hemiasterlin)	2018	Ovarian cancer	Phase 1; Phase 2/3 REFRAme study pending
BioAlta LLC; Himalaya Therapeutics	Ozuriftamab vedotin	BA3021, HTBA3021, CAB Ror2-ADC	chimeric/humanized	ROR2	IgG1 kappa	Valine-Citrulline (mc-val-cit-PAB; Cleavable linker)	4	MMAE	2018	Ovarian cancer (NCT04918186), NSCLC (NCT04681131), HNSCC (NCT05271604)	Phase 2
CytomX Therapeutics	Praluzatamab ravtansine	CX-2009	humanized	CD166, also known as activated leukocyte cell adhesion molecule (ALCAM)	IgG1 kappa	SPDB (N-succinimidyl-4-(2-pyridyldithio)butanoate; Protease-cleavable disulfide linker)	3.5	DM4	2017	Breast cancer (NCT04596150), Solid tumors	Phase 2
CSPC Pharmaceutical Group Limited		DP303c	humanized	HER2	IgG1	Undisclosed	2 (Site-specific)	MMAE	2019	HER2+ breast cancer (NCT05334810), HER2+ gastric cancer (CTR20210829; NCT04826107), ovarian cancer	Phase 2

										(NCT04828616), advanced solid tumors	
Daiichi Sankyo Co., Ltd.	Ifinatamab deruxtecan	DS-7300a	humanized	B7-H3	IgG1 kappa	Glycine-Glycine-Phenylalanine-Glycine (GGFG; Tetrapeptide-based cleavable linker)	4	DXd/DX8951 (MAAA-1181a) (Topoisomerase I inhibitor)	2019	Small cell lung cancer (NCT05280470), Solid tumors	Phase 2
Hangzhou Duoyi Biotechnology Co., Ltd. (also spelled as Hangzhou DAC Biotechnology Co., Ltd.)		DX126-262, DAC-001	mAb	HER2		Undisclosed	3.5-3.8	Tubulysin B analog Tub114	2019	HER2+ breast cancer (CTR20211871), gastric cancer	Phase 2
Eisai Inc.; BMS	Farletuzumab ecteribulin	MORAb-202	humanized	Folate receptor alpha	IgG1 kappa	Valine-Citrulline (maleimido-PEG2-valine-citrulline-p-aminobenzylcarbonyl; Enzymatically cleavable linker)	4	Eribulin	2017	Non-small cell lung cancer (NCT05577715), ovarian cancer (NCT05613088), solid tumors ((NCT04300556)	Phase 2
Seagen Inc.; Merck Sharp & Dohme Corp	Ladiratuzumab vedotin	SGN-LIV1A, MK-6440	humanized	LIV-1 (SLC39A6)	IgG1 kappa	Valine-citrulline (maleimidocaproyl-valyl-citrullinyl-p-aminobenzylloxycarbonyl (mc-val-cit-PABC; Protease-cleavable linker)	4	MMAE	2013	Lung cancer (NCT04032704), solid tumors (NCT04032704), breast cancer, TNBC	Phase 2
Sichuan Baili Pharmaceutical Co., Ltd. (subsidiary Systimmune)		BL-B01D1	mAb	HER3, EGFR		Undisclosed	—	Undisclosed	2021	Urinary system tumors (NCT05785039), breast cancer, gastrointestinal tumors, solid tumors	Phase 2 pending
Kelun-Biotech; Sorrento Therapeutics, Inc.		A166	mAb	HER2	IgG1	Valine-Citrulline (Cleavable linker)	2 (Site-specific)	Duostatin-5 (tubulin inhibitor)	2018	Solid tumors (CTR20212088)	Phase 2 pivotal
ADC Therapeutics Sarl	Camidanlumab tesirine	ADCT-301	human	CD25 (aka IL-2RA)	IgG1 kappa	Valine-Alanine (cleavable dipeptide linker)	2.3	Pyrrolobenzodiazepine (PBD) dimer SG3199	2015	Diffuse Large B-Cell Lymphoma, advanced solid tumors, AML, HL (NCT04052997), AML/ MDS/ MPN (NCT04639024)	Phase 2 pivotal
ImmunoGen	Pivekimab sunirine	IMGN632	humanized	CD123	IgG1 kappa	Alanine-Alanine (Cleavable linker)	2; Site-specific (S442C)	DGN549 IGN (indolino-benzodiazepine)	2017	Blastic plasmacytoid dendritic cell neoplasm ((NCT03386513), CD123+ hematological malignancies	Phase 2 pivotal

BioAlta LLC; Himalaya Therapeutics	Mecbotamab vedotin	BA3011, HTBA3011, CAB-AXL-ADC	humanized	AXL receptor tyrosine kinase	IgG1 kappa	Valine citrulline (maleimidocaproyl-valyl-citrullinyl-p-aminobenzyloxycarbonyl (mc-val-cit-PABC); Cleavable linker)	4	MMAE	2017	Ovarian cancer (NCT04918186), NSCLC (NCT04681131)	Phase 2 potentially pivotal
Macrogenics	Vobramitamab duocarmazine	MGC018	humanized	B7-H3	IgG1 kappa	Valine-citrulline-seco (Cleavable linker)	2.7	Duocarmycin	2018	Prostate cancer (NCT05551117), solid tumors	Phase 2/3
Merck Sharp & Dohme LLC (acquired VelosBio Inc.)	Zilovetamab vedotin	VLS-101, MK-2140	humanized	ROR1	IgG1 kappa	Valine-citrulline (Maleimidocaproyl-valine-citrulline-para-aminobenzoate; Cleavable linker)	4	MMAE	2019	Diffuse large B-cell lymphoma (NCT05139017), solid tumors, hematological malignancies	Phase 2/3
AbbVie	Telisotuzumab vedotin	ABBV-399	humanized	cMet (aka hepatocyte growth factor receptor)	IgG1 kappa	Valine-citrulline (Cleavable linker)	3.1	MMAE	2014	Non-small cell lung cancer (NCT04928846), advanced solid tumors	Phase 3
Ambrx Biopharma Inc.; NovoCodex Pharmaceuticals Ltd.; Zhejiang Medicine Co. Ltd		ARX788	humanized	HER2	IgG1	Oxime (Non-cleavable linker)	1.8 (Site-specific)	Amberstatin 269 (Auroxime)	2016	HER2-positive, metastatic breast cancer (NCT05426486), advanced cancers with HER2 expression	Phase 3
Daiichi Sankyo Co., Ltd.; AstraZeneca	Datopotamab deruxtecan	DS-1062, Dato-DXd	humanized	TROP-2	IgG1 kappa	Glycine-Glycine-Phenylalanine-Glycine (GGFG; Tetrapeptide-based cleavable linker)	4	DX-8951 (Topoisomerase I inhibitor)	2018	Breast cancer (NCT05104866, NCT05374512), NSCLC (NCT04656652, NCT05215340), Advanced or Metastatic Non Small Cell Lung Cancer With Actionable Genomic Alterations, Solid tumors	Phase 3
ImmunoGen; Sanofi, Innovent	Tusamitamab ravtansine	SAR408701	humanized	CEACAM5	IgG1 kappa	SPDB (N-succinimidyl 4-(2-pyridyldithio) butyrate linker (stable in plasma and cleavable inside cells))	3.8	DM4	2014	Gastric cancer, non-small cell lung cancer (NCT04154956), solid tumors	Phase 3
Jiangsu HengRui Medicine Co., Ltd.	Trastuzumab rezetecan	SHR-A1811	mAb	HER2	IgG1 kappa	Undisclosed	5.3 to 6.4	Rezetecan	2020	Breast cancer (NCT05424835), non-small cell lung cancer, gastric cancer or colorectal cancer, solid tumors	Phase 3

Klus Pharma; MSD		SKB264	humanized	TROP-2		Stable linker	7.4	Belotecan-derived payload	2019	Triple-neg breast cancer (NCT05347134), Non-small cell lung cancer, Solid tumors	Phase 3
Daiichi Sankyo Co., Ltd	Patritumab deruxtecan	U3-1402	human	HER3	IgG1 kappa	Glycine-Glycine-Phenylalanine-Glycine (GGFG; Cleavable linker))	8	DXd/DX-8951 (topoisomerase I inhibitor)	2016	Colorectal cancer, Breast cancer, non-small cell lung cancer (NCT05338970)	Phase 3
Mersana Therapeutics	Upifitamab rilsodotin	XMT-1536	humanized	NaPi2b	IgG1 kappa	Dolaflexin polymer scaffold	10 to 15 drugs per mAb	Auristatin F-hydroxypropylamide	2017	Ovarian cancer (NCT05329545), Cancers Likely to Express NaPi2b	Phase 3
LegoChem Biosciences, Inc.; IKSUDA Therapeutics, Shanghai Fosun Pharmaceutical Development Co, Ltd.	Trastuzumab mafodotin	IKS014, LCB14-0110, FS-1502	humanized	HER2	IgG1	β -glucuronidase (BG; Cleavable linker)	2 (Site-specific)	MMAF	2019	Breast cancer (NCT05755048)	Phase 3 pending
Shanghai Miracogen Inc.		MRG002	humanized	HER2	IgG1	Valine-Citrulline (Cleavable linker)	3.6	MMAE	2018	HER2+ breast cancer (NCT05263869, NCT04924699, NCT04742153), NSCL (NCT05141786 not yet recruiting), urothelial cancer (NCT05754853 not yet recruiting; NCT04839510), biliary tract cancer (NCT04837508), GC/GOJ (NCT05141747)	Phase 3 pending
Shanghai Miracogen Inc.		MRG003	human	EGFR	IgG1	Valine-Citrulline (Cleavable linker)	—	MMAE	2018	GC/GOJ (NCT05188209), nasopharyngeal carcinoma (NCT05126719), biliary tract cancer (NCT04838964), NSCLC (NCT04838548), HNSCC (NCT04868162, NCT05751512 not yet recruiting); colorectal cancer	Phase 3 pending

Supplementary Table S2: Antibody-drug conjugates sponsored by commercial firms that were terminated after entering clinical study. Data is as of April 1, 2023 and excludes molecules that entered clinical study prior to 2000.															
Company; partner(s)	INN	Drug code	Sequence source, Format	Target(s)	Isotype	Linker	DA R	Payload	Clinical phase initiation year	Indications	Termination phase	Lack of efficacy	Safety issues	Portfolio priorization	Reason for termination undisclosed
AbbVie	Samrotamab vedotin	ABBV- 085	humanized and chimeric	LRRC15	IgG1	Valine- Citrulline	2	MMAE	2015	Solid tumors	Phase 1				U
AbbVie	Rolinsatamab talirine	ABBV- 176	humanized	Prolactin receptor (PRLR)	IgG1	Valine- alanine	2	SGD1882 (PBD)	2017	Solid tumors	Phase 1		S		
AbbVie	Losatuxizuma b vedotin	ABBV- 221	humanized and chimeric	EGFR	IgG1	Valine- Citrulline	3	MMAE	2015	Solid tumors	Phase 1		S		
AbbVie	Serclutamab talirine	ABBV- 321	mAb	EGFR	IgG1	Valine- alanine	2	SGD-1882 (PBD)	2017	Solid tumors	Phase 1				U
AbbVie	Azintuxizuma b vedotin	ABBV- 838	humanized and chimeric	SLAMF7	IgG1	Valine- Citrulline	3	MMAE	2015	MM	Phase 1				U
AltruBio (formerly AbGenomics International)		AbGn- 107, Ab1- 18Hr1	chimeric	AG-7 (maybe CD71 (Transferrin receptor protein 1)?)	IgG1	Valine- Citrulline	2.5	Tubulin inhibitor	2016	Gis	Phase 1			P	
AbbVie	Depatuxizum ab mafodotin	ABT- 414	humanized (not chimeric)	EGFR	IgG1	Maleimid ocaproyl	3.8	MMAF	2012	Solid tumors	Phase 3	E			
ADC Therapeutics; MedImmune		ADCT- 502	humanized	HER2	IgG1	Valine- alanine	1.7	SG3199 (PBD)	2017	Solid tumors	Phase 1		S		

Astellas		AGS-16C3F, AGS-16M8F	human	ENPP3	IgG2 kappa	Maleimid ocaproyl	4	MMAF	2009	Renal	Phase 2	E			
Astellas Pharma Inc (acquired Agensys, Inc.)		AGS67 E	human	CD37	IgG2k	Valine-alanine	2.3	MMAE	2014	Lymphoid malignancies	Phase 1			P	
Amgen		AMG 172	mAb	CD70	IgG1	SMCC	— — —	DM1	2011	Renal	Phase 1				U
Amgen		AMG 595	human	EGFR variant III	IgG1	SMCC	3.5	DM1	2012	Glioma	Phase 1				U
Amgen		AMG22 4	human	BCMA	IgG1	MCC		DM1	2015	MM	Phase 1	E		P	
Astellas/Agen sys; Seattle Genetics	Sirtratumab vedotin	ASG-15ME	human	SLITRK6	IgG2 kappa	Valine-Citrulline	4	MMAE	2013	Solid tumors, bladder cancer	Phase 1			P	
Astellas /Agensys		ASG-5ME	human	SLC44A4	IgG2	Valine-citrulline		MMAE	2010	PANC Prost Gastric	Phase 1			P	
Astellas/Agen sys		ASP123 5, AGS62 P1	human	FLT3	IgG1	Alkoxyamine	2	AGD0182 (Auristatin)	2016	AML	Phase 1	E			
Sanofi		AVE96 33	humanized	CD33	IgG1	SPDB	3.5	DM4	2005	AML	Phase 1	E			
Bristol Myers Squibb (acquired Formation		AVID10 0	mAb	EGFR	IgG1	SMCC		DM1	2017	Solid Tumors	Phase 2	E			

Biologics (Forbuis))															
Bio-Thera Solutions		BAT80 01	humanized	HER2	IgG1	6- maleimid ocaproic acid	3.5	Maytansino id	NA	Breast cancer	Phase 3	E			
Bio-Thera Solutions		BAT80 03	humanized	Trop-2	IgG1	3 aa non- cleavable linker	2	Batansine	2019	Epithelial Cancers	Phase 1				U
Bayer	Lupartumab amadotin	BAY11 29980	human	C4.4a (LYPD3)	IgG1	mc- hydrazid e	4	Auristatin W	2014	Solid tumors	Phase 1				U
Bayer	Aprutumab ixadotin	BAY11 87982	human	Fibroblast growth factor receptor 2	IgG1	Caproyl	4.0 (1. 7~ 5.1)	Auristatin W	2015	Solid tumors	Phase 1		S		
Bayer		BAY79- 4620	human	Carbonic anhydrase IX CAIX		Valine- Citrulline		MMAE	2009	Solid tumors	Phase 1		S		
Bayer Schering	Anetumab ravtansine	BAY94- 9343	human	Mesothelin	IgG12	SPDB	3.2	DM4	2011	OvC Solid Tumors	Phase 2	E			
Biogen		BIIB- 015	humanized	Cripto	IgG1	SPDB		DM4	2008	Solid tumors	Phase 1			P	
Boehringer Ingelheim	Bivatuzumab mertansine	BIW1-1	humanized	CD44v6	IgG1	SPP	3	DM1	2002	Breast, H&N	Phase 1		S		
Bristol-Myers Squibb (acquired Medarex)		BMS- 936561 , MDX- 1203	human	CD70	IG1	Valine- Citrulline	1.2 5	MGBA duocarmyci n	2008	Renal NHL	Phase 1	E			

Bristol-Myers Squibb		BMS-986148	mAb	Mesothelin	IgG1	Valine-Citrulline	1.4	Duocarmycin-related	2015	Solid tumors	Phase 1/2			P	
Bristol-Myers Squibb		BMS-986183	mAb	Glypican-3		Valine-Citrulline	3 to 3.5	Tubulysin	2016	Liver	Phase 1			P	
Biotest Pharmaceuticals Corporation; ImmunoGen	Indatuximab ravtansine	BT-062	chimeric	CD138	IgG4 kappa	SPDB linker	3.5	DM4 maytansine	2008	CD138++ TNBC, MM, bladder	Phase 1/2			P	
Celldex Therapeutics	Glembatumumab vedotin	CDX-011, CR-011-vc-MMAE	human	Glycoprotein NMB	IgG2 kappa	Valine-Citrulline	2.7 (2 to 4)	MMAE	2006	Squamous cell lung cancer Triple negative breast Cancer Melanoma, Osteosarcoma	Phase 2 (pivotal)	E			
Celldex		CDX-014	human	T cell immunoglobulin mucin 1 (TIM-1)	IgG1	Valine-citrulline	4.5	MMAE	2016	Renal	Phase 1/2			P	
Pfizer (acquired Wyeth)		CMD-193	humanized	LEWIS Y	IgG1	AcBut		Calicheamicin	2004	Solid tumors	Phase 1		S		
Genentech		DCLL9718S, RG6109	mAb	C-type lectin-like molecule-1	IgG1	Cleavable disulfide linker	2	PBD monoamide	2017	AML	Phase 1	E	S		
ImmunoGen; Debiopharm International	Naratuximab emtansine	Debio 1562, K7153A, IMGNS29	humanized	CD37	IgG1 kappa	SMCC (Non-cleavable linker)	3 to 4 drugs	DM1 maytansine	2011	Phase 2 in Diffuse Large B-Cell Lymphoma or B-cell Non-Hodgkin's	Phase 2				

							pe r m Ab			Lymphoma; Phase 1 in non-Hodgkin lymphoma or CLL patients					
Genentech		DHES0 815A, RG614 8	humanized	HER2	IgG1	Cleavable disulfide linker	2	PBD monoamid e	2018	HER2-Positive Breast Cancer	Phase 1		S		U
Genentech		DLYE59 53A, RG784 1	mAb	Ly6E, lymphocyte antigen 6 complex, locus E	IgG1	Valine- citruline		MMAE	2014	Solid tumors	Phase 1				U
Genentech		DMOT 4039A, RG760 0	mAb	Mesothelin	IgG1	Valine- citruline	3.5	MMAE	2011	OvC PANC	Phase 1	E			
Genentech		DMUC 4064A, RG788 2	humanized	MUC16	IgG1	Valine- citruline	2	MMAE	2014	OvC PANC	Phase 1				U
Daiichi Sankyo Co., Ltd.		DS- 6157	humanized	GPR20		Glycine- Glycine- Phenylala nine- Glycine	8	DXd	2020	GIST	Phase 1	E			
Novartis		HKT28 8, NOV- 13	human	Cadherin-6	IgG1	sulfo- SPDB		DM4	2016	Solid tumors (epithelial OvC, renal cell carcinoma)	Phase 1		S		
Gilead (acquired Immunomedi cs, Inc.)	Milatuzumab doxorubicin	hLL1- DOX, IMMU- 115	humanized	CD74	IgG1	Hydrazon e	8	Doxorubici n	2009	NHL, CLL, MM	Phase 1/2	E			

ImmunoGen; Sanofi	Coltuximab ravtansine	HUB4- DM4, SAR34 19	humanized	CD19	IgG1	Sulfo- SPDB	3 to 4	DM4 maytansine	2007	NHL, ALL	Phase 2	E			
Genmab	Enapotamab vedotin	HuMax -Axl- ADC, AXL- 107- MMAE	human	Axl	IgG1	Valine- Citrulline	4	MMAE	2016	Solid tumors	Phase 1/2	E			
ImmunoGen	Cantuzumab ravtansine	IMGN2 42	humanized	CanAg	IgG1	SPDB	3 to 4	DM4	2005	Solid tumors	Phase 1		S		
ImmunoGen	Laprituximab emtansine	IMGN2 89	humanized	EGFR	IgG1	SMCC	3 to 4	DM1	2013	NSCLS, H&N	Phase 1		S		
ImmunoGen	Intetumumab -DM4	IMGN3 88, CNTO- 95- DM4	human	Alpha5 integrin	IgG1	SPDB	3 to 4	DM4	2008	Solid tumors	Phase 1			P	
ImmunoGen		IMGN7 79	humanized	CD33	IgG1	sulfo- SPDB	3	DGN462 IGN	2016	AML	Phase 1			P	
ImmunoGen	Lorvotuzuma b mertansine	IMGN- 901, N901- DM1, BB- 10901	humanized	CD56	IgG1	SPP	3.5	DL1	2001	Hematologica l malignancies Solid tumors	Phase 2	E			
Gilead (acquired Immunomedi cs, Inc.)	Labetuzumab govitecan	IMMU- 130, hMN14 -SN38	humanized	CEACAM5	IgG1	CL2A	7.6	SN38	2011	Colorectal	Phase 1/2				U

Novartis		LOP628	humanized	cKIT, CD117	IgG1kappa	SMCC		DM1 maytansine	2014	cKit-positive Solid Tumors AML	Phase 1		S		
Eli Lilly		LY3076226	human	Fibroblast Growth Factor Receptor 3	IgG1	sulfo-SPDB		DM4	2015	Solid tumors bladder cancer	Phase 1			P	
AstraZeneca/MedImmune		MEDI228	mAb	BCMA		Valine-Citrulline	— — —	SG3199 (PBD)	2018	MM	Phase 1	E	S		
AstraZeneca/MedImmune; ADC Therapeutics		MEDI3726 (formerly ADCT-401)	humanized	PSMA	IgG1	Valine-alanine	1.8	SG3199 (PBD)	2017	Prostate	Phase 1		S		
AstraZeneca/MedImmune		MEDI4276	mAb (bispecific)	HER2 domain II, IV (biparatopic)	IG1	mc-lysine (Cleavable linker)	4	Tubulysin AZ13599185	2015	Solid tumors	Phase 1/2	E	S		
AstraZeneca/MedImmune		MEDI-547	human	EphA2	IgG1	Maleimidoacaproyl	4	MMAF	2009	Solid tumors	Phase 1		S		
AstraZeneca/MedImmune LLC	Idactamab	MEDI7247	human	ASCT2	IgG1	Valine-Citrulline	2	PBD dimer	2017	Solid tumors, hematological malignancies	Phase 1	E	S		
Magenta Therapeutics		MGTA-117	mAb	CD117 (aka cKIT)		Undisclosed	— —	Amanitin	2021	Acute myeloid leukemia and myelodysplasia-excess blasts	Phase 1/2		S		

Millennium/Takeda		MLN2704, huJ591-ADC	deimmunized'	PSMA	IgG1	SPP	3 to 4	DM1	2002	Prostate	Phase 1/2		S		
Novartis; MorphoSys		PCA062, NOV-10	human	P-cadherin	IgG1	SMCC	3.8	DM1	2015	p-CAD-positive tumors	Phase 1	E			
Oxford BioMedica; Pfizer		PF-06263507, A1mc MMAF	humanized	5T4	IgG1	Maleimidoacaproyl	4	MMAF	2013	Solid tumors	Phase 1	E		P	
Pfizer		PF-06647263	humanized	Ephrin-A4	IgG1	AcBut	4.6	Calicheamicin	2014	Solid tumors	Phase 1			P	
Pfizer		PF-06650808	humanized	Notch-3	IgG1	Valine-Citrulline		Aur0101 (PF-06380101)	2014	Solid tumors	Phase 1			P	
Pfizer		PF-06664178	humanized	TROP-2	IgG1	Valine-Citrulline	2	Aur0101 (PF-06380101)	2014	Solid tumors	Phase 1	E	S		
Pfizer		PF-06688992	mAb	GD3	IgG1	Undisclosed		Undisclosed	2017	Melanoma	Phase 1				U
Pfizer		PF-06804103, NG-HER2 ADC	mAb	HER2	IgG1	Valine-Citrulline	4	Aur0101 (PF-06380101)	2017	Breast NSCLC Gastric	Phase 1				U
Progenics Pharmaceuticals, Inc.		PSMA-ADC, PSMA ADC	human	PSMA	IgG1	Valine-Citrulline	3 to 3.5	MMAE	2008	Prostate	Phase 2		S		

Genentech	Vandortuzumab vedotin	RG7450, DSTP3086S; 89Zr-DFO-MSTP2109A (diagnostic)	humanized	STEAP1	IgG1	Valine-Citrulline	3 to 4	MMAE	2012	Prostate	Phase 1				U
Genentech	Sofituzumab vedotin	RG7458, DMUC5754A	humanized	MUC16	IgG1	Valine-Citrulline	3 to 4	MMAE	2011	OvC PANC	Phase 1	E			
Genentech	Pinatuzumab vedotin	RG7593, DCDT2980S	humanized	CD22	IgG1	mc-val-cit PABC linker	3.5 (3 to 4)	MMAE	2010	NHL CLL	Phase 2	E	S		
Genentech		RG7598, DFRF4539A	humanized	FcRH5	IgG1	Valine-Citrulline		MMAE	2011	MM	Phase 1	E			
Genentech	Lifastuzumab vedotin	RG7599, DNIB-0600A	humanized	NaPi2b	IgG1	Valine-Citrulline	3.5	MMAE	2011	NSCLC, OvC	Phase 2	E			
Genentech		RG7636, DEDN6526A	mAb	Endothelin B receptor (ETBR)	IgG1	Valine-Citrulline		MMAE	2012	Melanoma	Phase 1				U
Genentech; Seattle Genetics	iladatumumab vedotin	RG7986, DCDS0780A, RO7032005	humanized	CD79b	IgG1	Valine-Citrulline	2	MMAE	2015	NHL	Phase 1		S		

ImmunoGen; Sanofi		SAR42 8926	mAb	LAMP-1	IgG1	SPDB		DM4	2015	Solid tumors	Phase 1				U
ImmunoGen; Sanofi		SAR56 6658; HuDS6- DM4	humanized	MUC1 DS6 (aka CA6)	IgG1	SPDB		DM4	2010	Solid tumors, TNBC	Phase 2	E	S		
AbbVie (acquired Stem CentRx)		SC-002	mAb	DLL3	IgG1	Valine- citrulline	Sit e- sp eci fic	SG3199 (PBD)	2015	SCL NET	Phase 1			P	
AbbVie (acquired Stem CentRx)	Tamrintamab pamozirine	SC-003	humanized	Dipeptidas e-3	IgG1	Valine- Citrulline	2	SC-DR002 (PBD)	2015	OvC	Phase 1			P	
AbbVie (acquired Stem CentRx)		SC-004	mAb	CLDN6/9		Valine- citrulline	2	SG3199 (PBD)	2017	Solid tumors	Phase 1			P	
AbbVie (acquired Stem CentRx)		SC-005	mAb	Undisclo d		Undisclo ed	— — —	PDB	2018	TNBC	Phase 1			P	
AbbVie (acquired Stem CentRx)		SC-006	mAb	RNF43		Valine- citrulline	Sit e- sp eci fic	SG3199 (PBD)	2017	Colorectal	Phase 1			P	
AbbVie (acquired Stem CentRx)		SC-007	mAb	Undisclo d		Undisclo ed	— — —	Undisclo d	2017	Gis	Phase 1	E	S		
AbbVie (acquired Stem CentRx)	Rovalpituzum ab tesirine	SC16LD 6.5	humanized	DLL3	IgG1	Valine- alanine	2	D6.5 (PBD)	2013	SCLC	Phase 3	E	S		

Seattle Genetics	Vorsetuzumab mafodotin	SGN-75	humanized	CD70	IgG1	Maleimido-caproyl	4	MMAF	2009	Renal NHL	Phase 1		S	P	
Seattle Genetics		SGN-CD123A	humanized	CD123	IgG1	Valine-alanine	2	SGD-1882 (PBD)	2016	AML	Phase 1		S		
Seattle Genetics	Denintuzumab mafodotin	SGN-CD19A	humanized	CD19	IgG1	Maleimido-caproyl	4	MMAF	2013	Hematological malignancies	Phase 2		S	P	
Seattle Genetics		SGN-CD19B	humanized	CD19	IgG1	Valine-alanine	2	SGD-1882 (PBD)	2016	NHL	Phase 1				U
Seattle Genetics	Vadastuximab talirine	SGN-CD33A	humanized	CD33	IgG1	Valine-alanine	2	PBD dimer	2013	AML, MDS	Phase 3		S		
Seattle Genetics		SGN-CD352A	humanized	SLAMF6	IgG1	Valine-alanine	2	SGD1882 (PBD)	2016	MM	Phase 1			P	
Seagen Inc.		SGN-CD47M	humanized	CD47	IgG4	Undisclosed	— — —	MMAE	2019	Solid tumors	Phase 1			P	
Seattle Genetics		SGN-CD48a	humanized	CD48	IgG1	β -glucuronidase (BG) Cleavable linker	8	MMAE	2018	MM	Phase 1			P	
Seattle Genetics		SGN-CD70A	mAb	CD70	IgG1	Valine-alanine	2	SGD-1882 (PBD)	2014	Renal NHL	Phase 1		S	P	
Jiangsu HengRui Medicine Co., Ltd		SHR-A1403, HTI-1066	humanized	c-Met	IgG2	3-propylthio-mc	2	MMAF derivative	2017	Solid tumors	Phase 1				U

Supplementary Table S3: Antibodies conjugated to alternative payloads evaluated in clinical studies sponsored by commercial firms. Data as of April 1, 2023.												
Company	INN	Drug code (s)	Format	Target(s)	Isotype	Linker	DAR	Payload	Clinical phase initiation year	Indications of clinical studies	Most advanced phase of clinical development	Therapeutic area
Dyne Therapeutics, Inc.		DYNE-251	Antibody Fab-oligo conjugate	TfR1	NA	Cleavable		Phosphorodiamidate morpholino oligomer	2021	Duchenne muscular dystrophy (NCT05524883)	Phase 1/2	Muscular diseases
Dyne Therapeutics		DYNE-101	Antibody Fab-oligo conjugate	TfR1	NA	Val-Cit (cleavable)	—	Antisense oligo	2022	Myotonic Dystrophy Type 1 (NCT05481879)	Phase 1/2	Muscular diseases
Genentech, Symphogen		DSTA4637S, RG7861, Sym009	Antibody-antibiotic conjugate	Staphylococcus aureus	IgG1	Valine-citruline (Cleavable linker)	2 (Site-specific)	dmDNA31 (4-dimethylamino piperidino-hydroxybenzoxazinorifamycin) antibiotic	2015	<i>Staphylococcus aureus</i> bacteremia (NCT03162250)	Terminated at Phase 1	Infectious disease
Orum Therapeutics		ORM-5029	Antibody-degrader conjugate	HER2	IgG1 kappa	Val-Cit PABc	—	SMol006 protein degrader	2022	Solid tumors (NCT05511844)	Phase 1	Cancer
Avidity Biosciences, Inc.		AOC 1020	Antibody-oligo conjugate	TfR1	NA	Non-cleavable linker	—	siRNA	2022	Facioscapulohumeral muscular dystrophy (FORTITUDE trial)	Phase 1/2	Genetic disorder
Avidity Biosciences, Inc.		AOC 1044	Antibody-oligo conjugate	TfR1	NA	Non-cleavable linker	—	Phosphorodiamidate morpholino oligomers	2022	Duchenne muscular dystrophy (NCT05670730)	Phase 1/2	Genetic disorder
Avidity Biosciences, Inc.		AOC 1001	Antibody-oligo conjugate	TfR1	IgG1	Non-cleavable linker	—	siRNA	2021	Myotonic dystrophy (NCT05479981, NCT05027269)	Phase 2	Genetic disorder
Gmax Biopharm		GMA-106, GMA106	Antibody-peptide conjugate	GIPR	NA	Undisclosed	—	GLP-1 peptide	2021	Obesity (NCT05054530)	Phase 1	Metabolic
Attralus, Inc.		AT-02	Antibody-peptide conjugate	Undisclosed	IgG1	Undisclosed	—	Pan-amyloid removal peptide	2022	Systemic amyloidosis (NCT05521022)	Phase 1 pending	Hemostasis
Gmax Biopharm		GMA-102	Antibody-peptide conjugate	GLP-1R	NA	Undisclosed	—	GLP-1 peptide	Unknown	Diabetes (CTR20211661)	Phase 3	Metabolic
Gmax Biopharm		GMA-105	Antibody-peptide conjugate	GLP-1R	NA	Undisclosed	—	GLP-1 peptide	Unknown	Obesity	Phase 2	Metabolic

AbbVie		ABBV-319	Antibody-steroid conjugate	CD19	IgG1	Undisclosed		Glucocorticoid receptor modulator steroid	2022	B-cell malignancies (NCT05512390)	Phase 1	Cancer
AbbVie		ABBV-154	Antibody-steroid conjugate	TNF	NA	Undisclosed	—	Steroid	2019	Crohn's disease (NCT05068284), Polymyalgia rheumatica (NCT04972968), Rheumatoid arthritis (NCT04888585)	Phase 2	Immune-mediated disorders
AbbVie	Adalimumab fosimdesonide	ABBV-3373	Antibody-steroid conjugate	TNF	IgG1 kappa	mal-Gly-Ala-Ala (Cleavable linker)	4	Glucocorticoid receptor modulator steroid	2018	Rheumatoid arthritis (NCT03823391)	Terminated at Phase 2	Immune-mediated disorders
Takeda		TAK-500	Immune-stimulating antibody conjugate	CCR2	IgG1	Maleimide-containing protease-cleavable peptide linker	—	TAK-676	2022	Advanced solid tumors (NCT05070247)	Phase 1	Cancer
Mersana Therapeutics, GSK		XMT-2056	Immune-stimulating antibody conjugate	HER2	NA	Undisclosed	8	STING agonist payload	2022	Gastric cancer (NCT05514717)	Phase 1	Cancer
Bolt Biotherapeutics, Inc.	Trastuzumab imbotolimod	BDC-1001	Immune-stimulating antibody conjugate	HER2	IgG1 kappa	Non-cleavable linker	2.5	TLR 7/8 dual agonist	2020	HER2-expressing solid tumors (NCT04278144)	Phase 1/2	Cancer
Tallac Therapeutics, Inc.		TAC-001	Immune-stimulating antibody conjugate	CD22	NA	Undisclosed	—	Toll-like Receptor 9 agonist CpG ODNs	2022	Solid tumors (NCT05399654)	Phase 1/2	Cancer
Novartis		NJH395	Immune-stimulating antibody conjugate	HER2	NA	Undisclosed	—	TLR7 agonist	2018	Non-breast HER2+ advanced cancers (NCT03696771)	Terminated at Phase 1	Cancer
Silverback Therapeutics Inc.	Pertuzumab zuvotolimod	SBT6050	Immune-stimulating antibody conjugate	HER2	IgG1 kappa	Undisclosed	—	TLR 8 agonist	2020	HER2+ cancers (NCT05091528, NCT05091528)	Terminated at Phase 1/2	Cancer
Silverback Therapeutics Inc.		SBT6290	Immune-stimulating antibody conjugate	Nectin4	IgG1	Undisclosed	—	TLR8 agonist	2022	Solid tumors (NCT05234606)	Terminated at Phase 1/2	Cancer

