KDDF 국가신약개발사업단
Korea Drug Development Fund

2023 글로벌 제약·바이오 R&D 동향 : Oncology

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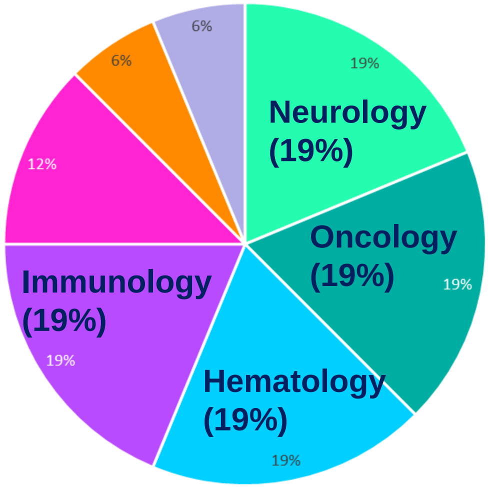
I-I. Overall current deals

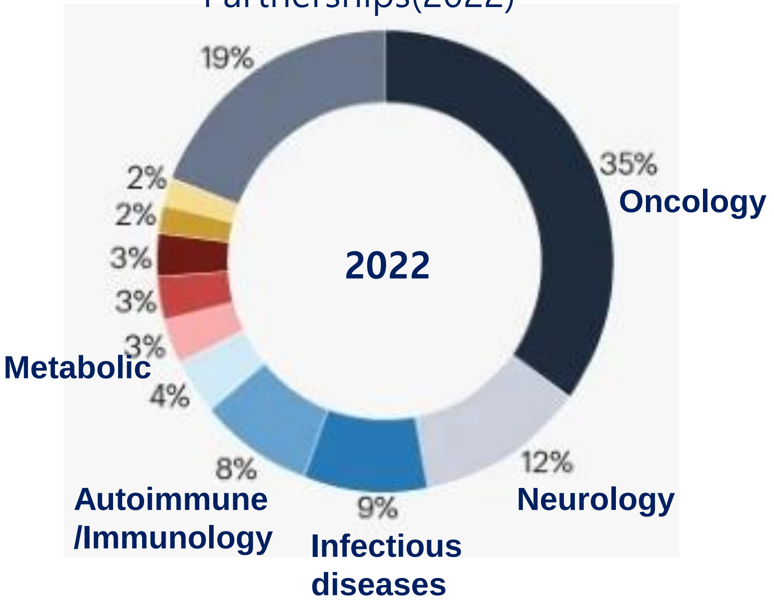
Retrieved from Nat Rev Drug Disc(2023)
Retrieved from Nat Rev Drug Disc(2022)

❖ Breakdown by TA

- M&As(2022) -



- Partnerships(2022) -



❖ Dealmaking

- M&As & Partnerships(2021, 2022) -

Deals in 2021, 2022				
	Deal Volume		Deal Value(disclosed tot.)	
	2021	2022	2021	2022
M&A	196	**171(↓)**	$153Bn	**$87Bn(↓)**
Partnership	1,200	**971(↓)**	$178Bn	**$179Bn**

Partnerships by TA in 2021, 2022					
		TA		Ratio	
		2021	2022	2021	2022
Partnership /TA	1'st	Oncology	Oncology	34%	**35%**
	2'nd	Infectious.	Neurology	13%	**12%**
	3'rd	Neurology	Infectious.	12%	**9%**
	4'th	Immunology	Immunology	8%	**8%**

I-II. Top 10 M&As

Retrieved from Nat Rev Drug Disc(2023), GlobalData

❖ Top 10 M&As of 2022 by tot. deal value

Top 10 M&As					
	Acquirer	Target focus	Acquired company	Deal value (US$ Bn)	Announced Month
1	**Pfizer**	Solid tumor medicines and hematologic malignancies	**Seagen**	43.00	2023/3
2	**Amgen**	Autoimmune and severe inflammatory diseases	**Horizon Therapeutics**	27.80	2022/12
3	**Pfizer**	Migraine treatment and prevention	**Biohaven Pharmaceuticals**	11.60	2022/5
4	**MSD**	Autoimmune diseases(IBD, SSc-ILD, etc.)	**Prometheus Biosciences**	10.80	2023/4
5	**Astellas**	Ophthalmic disease	**Iveric bio**	5.900	2023/4
6	**Pfizer**	Sickle cell disease other haematological diseases	**Global Blood Therapeutics**	5.204	2022/8
7	**BMS**	Targeted oncology therapies(METi, RETi, etc.)	**Turning Point Therapeutics**	4.100	2022/6
8	**Amgen**	Autoimmune diseases	**ChemoCentryx**	3.736	2022/8
9	**GSK**	Infectious disease vaccines	**Affinivax**	3.300	2022/5
10	Biocon Biologics	Insulin, oncology and autoimmune disease biosimilars	Viatris's biosimilars business	3.000	2022/2

I-III. Top 10 Partnerships

Retrieved from Nat Rev Drug Disc(2023), GlobalData

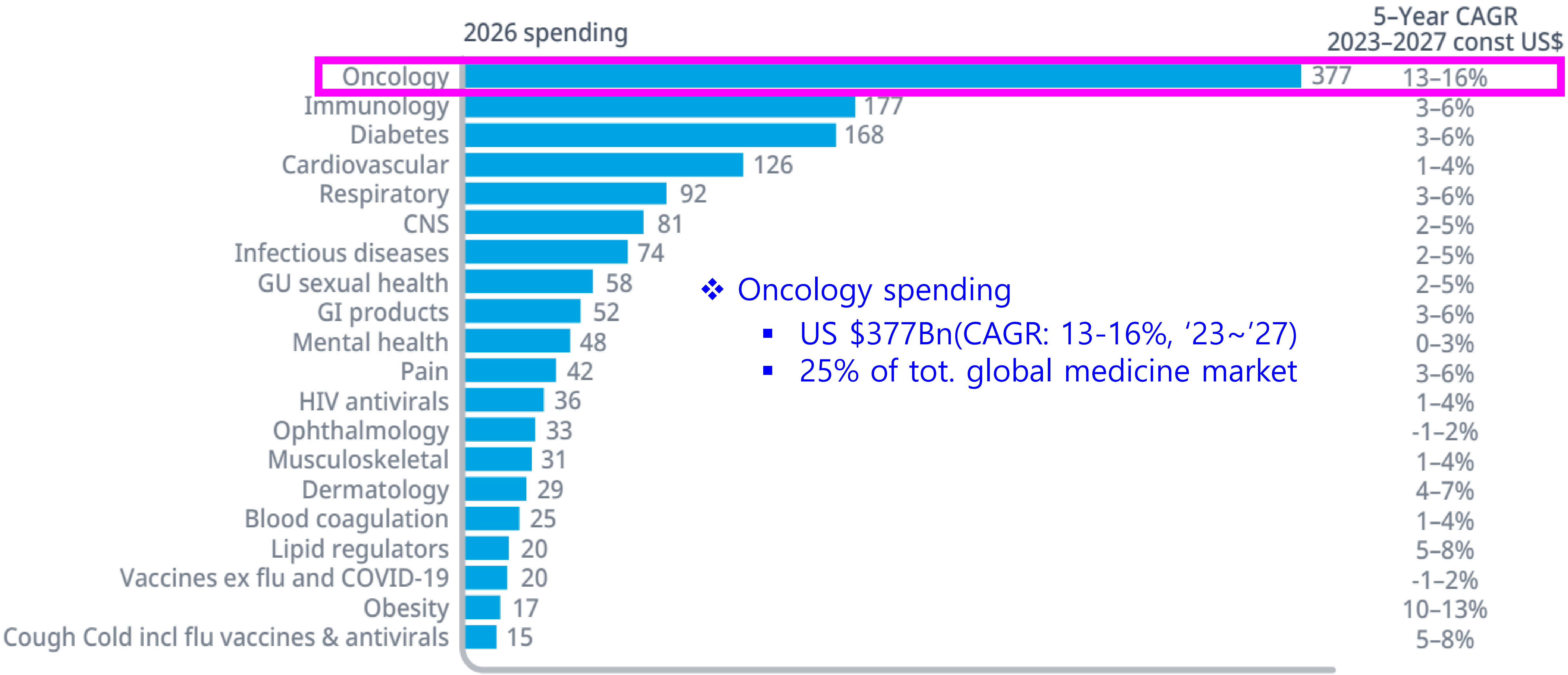
❖ Top 10 Partnerships of 2022 by tot. deal value (>$3Bn)

	Top 10 M&As					
	Company	Partner	TA	Deal focus (Blue: Ab, Green: CGT, Gray: Others)	Deal value (US$ Bn)	Announced Month
1	Kelun-Biotech	MSD	Oncology	**ADC**	9.475	2022/12
2	IGM Biosciences	Sanofi	Autoimmune/Immunology Oncology	**IgM Ab** agonists	6.165	2022/3
3	Poseida Therapeutics	Roche	Oncology	**Allo. CAR-T**	6.135	2022/8
4	Nimbus Therapeutics	Takeda	Autoimmune/Immunology	Oral **allosteric** TYK2 **inhibitor**	6.000	2022/12
5	Exscientia	Sanofi	Autoimmune/Immunology Oncology	AI-driven **precision** medicines	5.245	2022/1
6	Akeso	Summit Therapeutics	Oncology	**BsAb**(αPD-1 x αVEGF)	5.000	2022/12
7	Arcturus Therapeutics	CSL Seqirus	Infectious disease	Self-amplifying mRNA tech. for COVID-19 vaccine develop.	4.500	2022/11
8	Immatics	BMS	Oncology	**Allo. TCR-T** cell **Allo. CAR-T** cell programs	4.260	2022/6
9	Arcellx	Kite Pharma	Oncology	**Auto. CAR-T** cell therapy	4.225	2022/12
10	Orna Therapeutics	MSD	Infectious disease Oncology	Circular **RNA** platform	3.650	2022/8

II. Oncology Trends in 2022

II-I. Oncology spending(forecast for 2026), R&D(2022)
II-II. 2023 Valuable clinical trials
II-III. 2022 Approvals(FDA, EMA)
II-IV. Modality

II-I. Oncology spending(forecast for 2026)

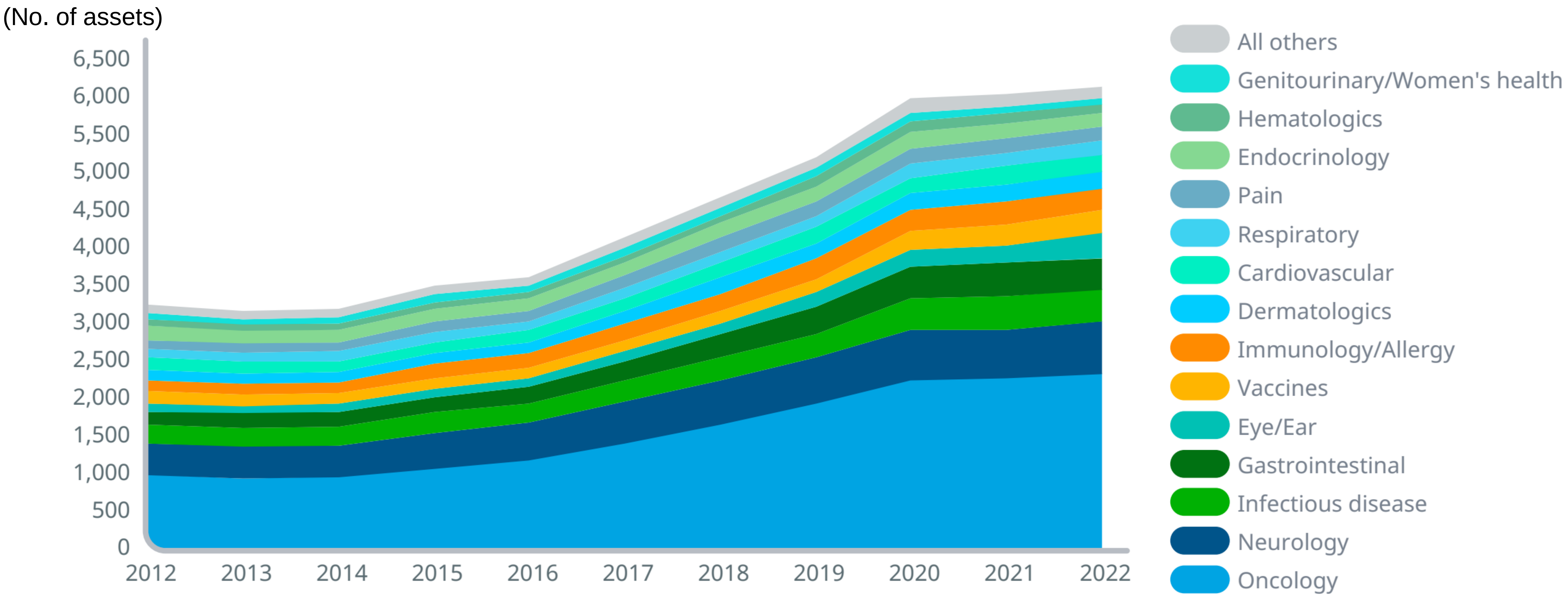


❖ Oncology spending
- US $377Bn(CAGR: 13-16%, ‘23~’27)
- 25% of tot. global medicine market

IQVIA Institute, The Global Use of Medicines, 2023

II-I. Oncology R&D(2022)

(Phase I ~ Regulatory submission)



Source: IQVIA Pipeline Intelligence, Dec 2022; IQVIA Institute, Jan 2023.

IQVIA Institute, The Global Trends in R&D 2023, 2023

II-II. 2023 Valuable clinical trials

Waiting the results from clinical trials							
	Company	Product	MoA	Indication	Stage	Expectation	rNPV
1	DS/AZ	Datopotamab deruxtecan	Trop2 ADC	Breast CA NSCLC	Phase 3	1'st P3 data due H1'23	$9.6Bn
2	Intellia /Regeneron	NTLA-2001	CRISPR/CAS9 Gene editing	ATTR-PN ATTR-CM	Phase 1	Further cuts of P1, pivotal plans awaited	$6.3Bn
3	J&J	Nipocalimab	FcRn antagonist	Myasthenia Gravis	Phase 3	P3 ongoing, further pivotal plans awaited	$5.4Bn
4	Moderna	mRNA-1647	Vaccine	CMV	Phase 3	P3 ongoing	$4.7Bn
5	J&J/Genmab	Talquetamab	BsAb(αGPRC5D x αCD3)	MM	Phase 3	Mid-stage readouts due over the year	$4.5Bn
6	Karuna Therapeutics	KarXT	M1/M4-muscarinic agonist	Schizophrenia	Phase 3	Pivotal ongoing, Further data & US filing slated for 2023	$4.2Bn
7	Cytokinetics	Aficamten	Cardiac myosin inhibitor	HCMP	Phase 3	ph3 data due H2'23	$3.7Bn
8	Roche	Tiragolumab	mAb(αTIGIT)	NSCLC	Phase 3	Further OS due in '23	$3.2Bn
9	DS	Patritumab deruxtecan	HER3 ADC	Breast CA NSCLC	Phase 2	Pivotal P2 data due '23	$2.9Bn
10	CRISPR/Vertex	Exagamglogene autotemcel (Exa-cel)	CRISPR/CAS9 Gene editing	TDT SCD	Registration Phase 3	US & EU filings anticipated by Q1'23	$2.4Bn

Retrieved from Vantage Preview Report 2023

II-III. (FDA) 12 Approvals

Retrieved from Nat Rev Drug Disc(2023), A Mullard et al.

Oncology drugs FDA CDER approved in 2022					
연번	성분명	제품명	제약사	작용기전	적응증
1	Tebentafusp	Kimmtrak	Immunocore	gp100 peptide-HLAxCD3 bispecific T cell engager	포도막 흑색종
2	Relatlimab+nivolumab	Opdualag	BMS	LAG3-targeted mAb+PD1-targeted mAb	흑색종
3	Lutetium Lu-177 vipivotide tetraxetan	Pluvicto	Novatis	PSMA-binding radioligand therapeutic agent	PSMA 양성 전립선암
4	Futibatinib	Lytgobi	Taiho Oncology	FGFR kinase inhibitor	FGFR2 유전자 융합 또는 재배열을 보이는 간내담관암
5	Tremelimumab	Imjudo	AstraZeneca	CTLA4-targeted mAb	간세포암
6	Teclistamab	Tecvayli	J&J	BCMAxCD3 bispecific antibody	다발성 골수종
7	Mirvetuximab soravtansine	Elahere	Immunogen	FRα-targeted ADC	난소암
8	Olutasidenib	Rezlidhia	Rigel/Forma	IDH1 inhibitor	IDH1 변이 급성 골수성 백혈병
9	Adagrasib	Krazati	Mirati	KRAS-G12C inhibitor	KRASG12C 변이 비소세포폐암
10	Mosunetuzumab	Lunsumio	Roche/Genentech	CD20xCD3 bispecific antibody	여포성 림프종

Oncology drugs FDA CBER approved in 2022					
연번	성분명	제품명	제약사	작용기전	적응증
1	Ciltacabtagene autoleucel	Carvykti	Legend Biotech/J&J	BCMA-targeted genetically modified autologous T cell immunotherapy	Multiple myeloma
2	Nadofaragene firadenovec	Adstiladrin	Ferring	Interfereon α-2b-encoding adenovirus vector gene therapy	BCG-unresponsive non-muscle invasive bladder cancer

II-III. (EMA) 12 Approvals

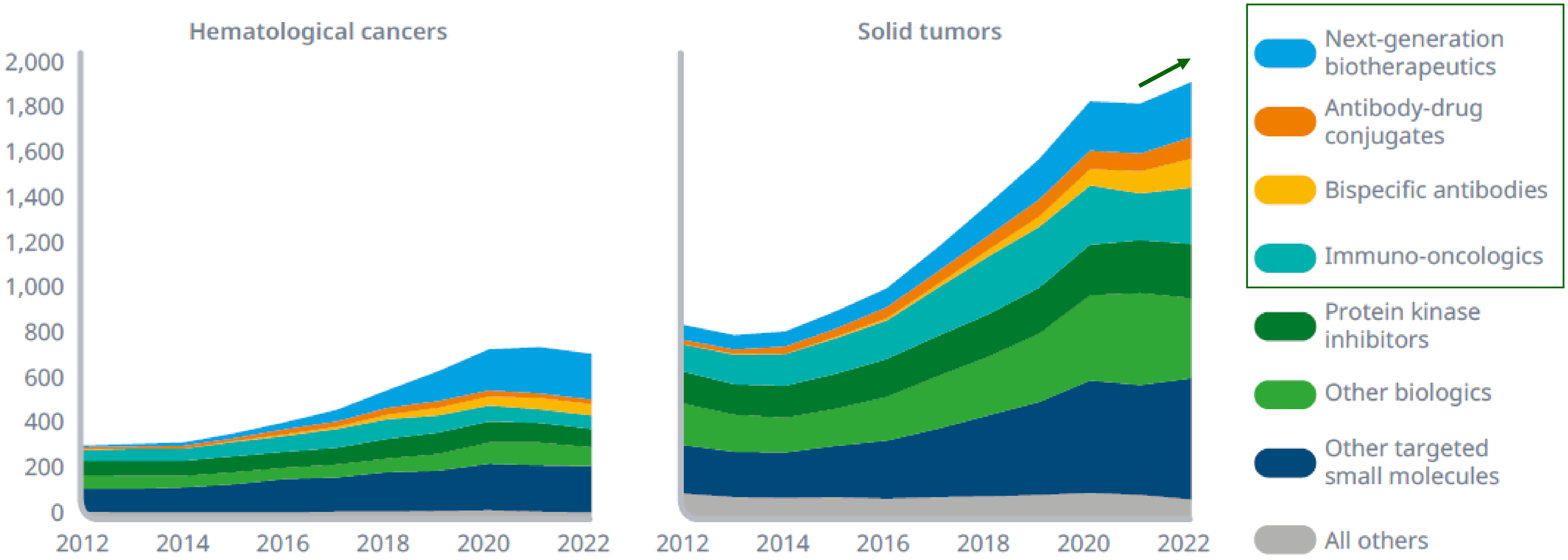
Retrieved from EMA, Human Medicines Highlights 2022

Oncology drugs EMA approved in 2022					
연번	성분명	제품명	제약사	작용기전	적응증
1	Lisocabtagene maraceucel	Breyanzi	BMS	CD19 CAR-T	Diffuse large B-cell lymphoma primary mediastinal large B-cell lymphoma follicular lymphoma grade 3B
2	Ciltacabtagene autoleucel	Carvykti	Janssen	BCMA CAR-T	Multiple Myeloma
3	Tabelecleucel	Ebvallo	Pierre Fabre Medicament	T-cell immunotherapy	Lymphoproliferative Disorders
4	Tremelimumab	Imjudo	AstraZeneca	CTLA-4 monoclonal Ab	Carcinoma, Hepatocellular
5	Tebentafusp	Kimmtrak	Immunocore	gp100 peptide-HLAxCD3 bispecific T cell engager	Uveal melanoma
6	Mosunetuzumab	Lunsumio	Roche	CD20xCD3 bispecific antibody	Follicular Lymphoma
7	Relatlimab+nivolumab	Opdualag	BMS	LAG3-targeted mAb+PD1-targeted mAb	Melanoma
8	Lutetium Lu-177 vipivotide tetraxetan	Pluvicto	Novartis	PSMA-binding radioligand therapeutic agent	Prostatic Neoplasms, Castration-Resistant
9	Capmatinib	Tabrecta	Novartis	MET Kinase inhibitor	Carcinoma, Non-Small-Cell Lung
10	Teclistamab	Tecvayli	Janssen	BCMAxCD3 bispecific antibody	Multiple Myeloma
11	Tremelimumab	Tremelimumab AstraZeneca	AstraZeneca	CTLA4-targeted mAb	Carcinoma, Non-Small-Cell Lung
12	Loncastuximab tesirine	Zynlonta	ADC Therapeutics	CD19 target ADC	Diffuse large B-cell lymphoma, high-grade B-cell lymphoma

II. Oncology Trends in 2022

II-IV. Modality

(Phase I to regulatory submission)



- Focused on solid CA with ADC, BsAb, IO, CAR-T

IQVIA Institute, Global Oncology Trends 2023

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III. IO, BsAb, CGT, ADC in Oncology 2022

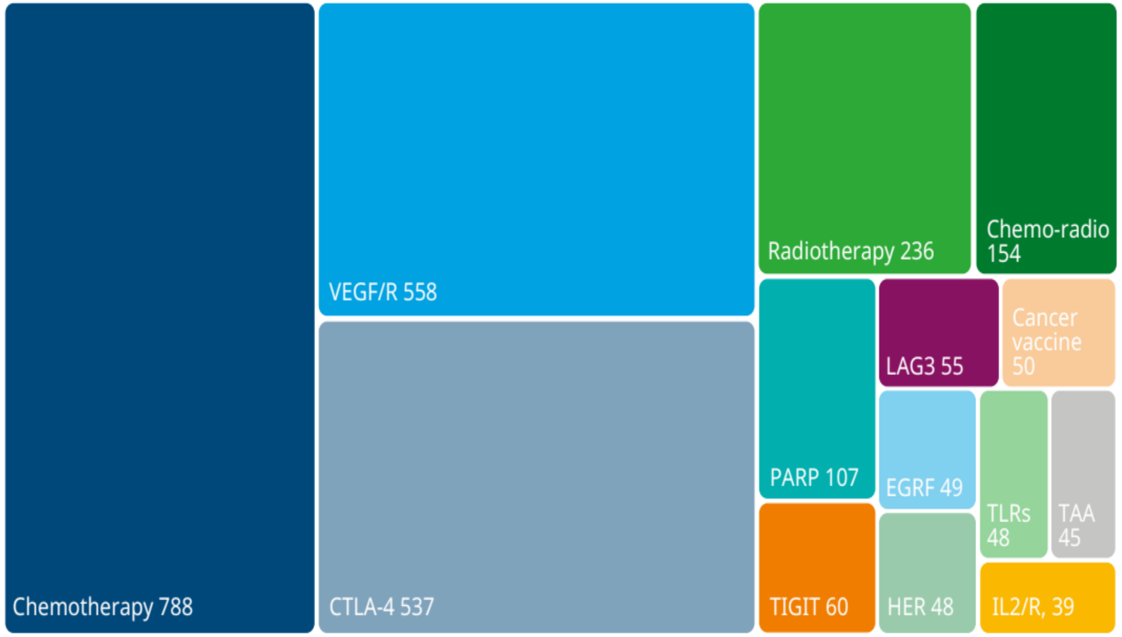
III-I. IO(R&D 2021, 2022)
III-II. BsAb(R&D 2022, Current deals)
III-III. CGT(R&D 2022)
III-IV. ADC(R&D 2022)

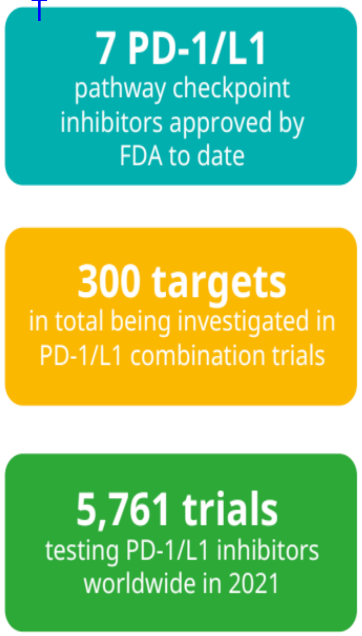
III-I. IO(R&D 2021, 2022)

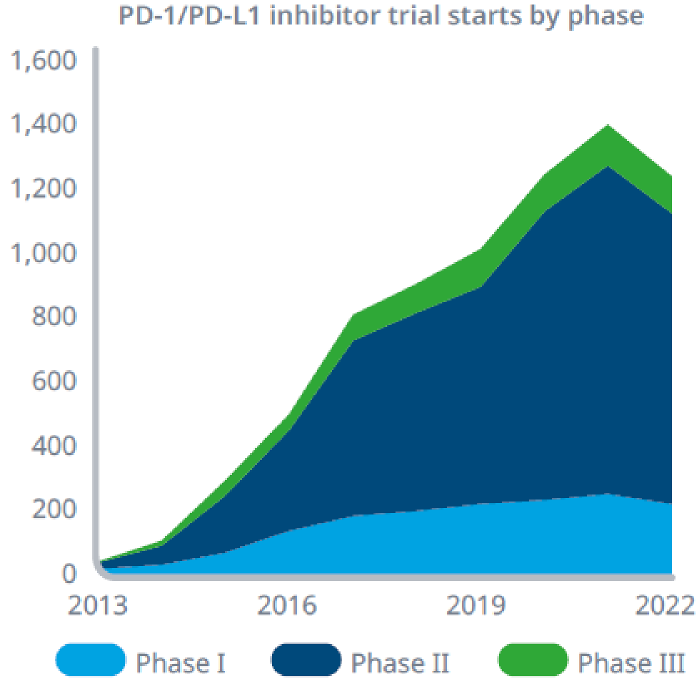
IQVIA Institute, Global Oncology Trends 2022, 2023

+ αPD-1 mAb Approval in 2023
: Zynyz(Retifanlimab, Incyte)

(Phase I to regulatory submission)







Challenges and opportunities in the PD1/PDL1 inhibitor clinical trial landscape, Nature Reviews Drug Discovery, Feb 2022.

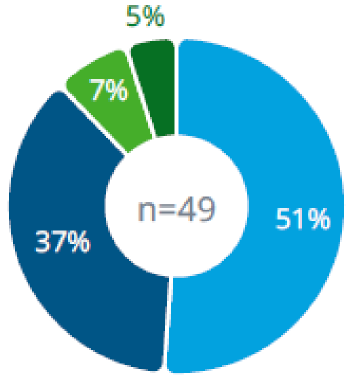
Source: Citeline Trialtrove, IQVIA Institute, Apr 2023.

- ❖ 5,761('21) & 3,368('22) testing PD-1/PD-L1 inhibitors
- ❖ >80% of clinical trials with αPD-1/αPD-L1 inhibitor as a combination therapy(monotherapy trials ↓)
- ❖ 300 combi. Targets/pathways

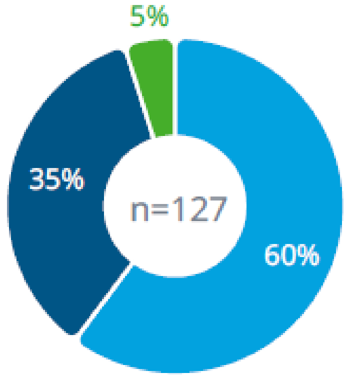
III-II. BsAb(R&D 2022)

(Phase I to regulatory submission)

Hematological cancers



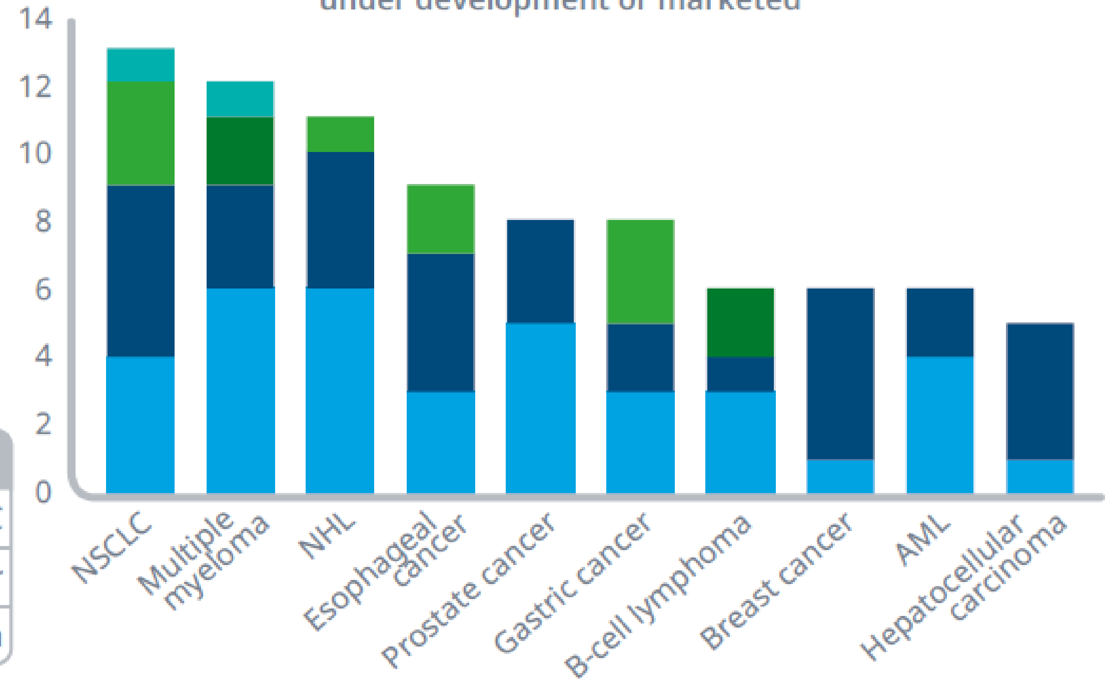
Solid tumors



MARKETED	
blinatumomab	ALL
mosunetuzumab	follicular lymphoma
teclistamab	multiple myeloma

MARKETED	
amivantamab	NSCLC
cadonilimab	cervical cancer
tebentafusp	uveal melanoma

Top 10 cancers by number of bispecific antibodies under development or marketed



Phase I Phase II Phase III Pre-registration Marketed

Source: IQVIA Pipeline Intelligence, Dec 2022; IQVIA Institute, Apr 2023.

IQVIA Institute, Global Oncology Trends 2023

- ❖ About 130 BsAbs(Hema: 24%, Solid: 67%, Both: 9%)
- ❖ Early trials(>50%), Phase III(Hema:7%, Solid: 5%)

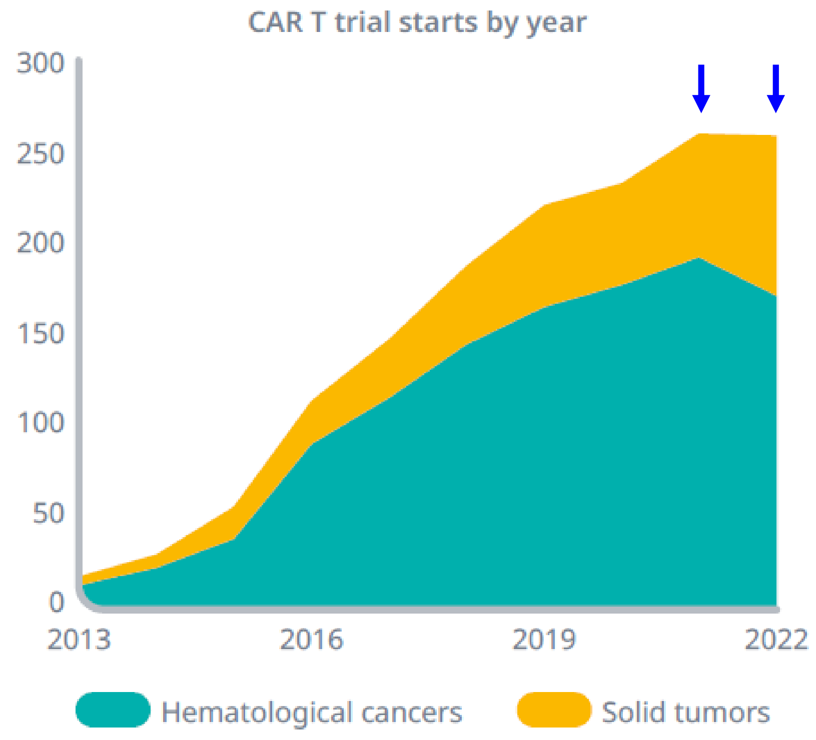
III-II. BsAb(Current Deals)

Retrieved from GlobalData

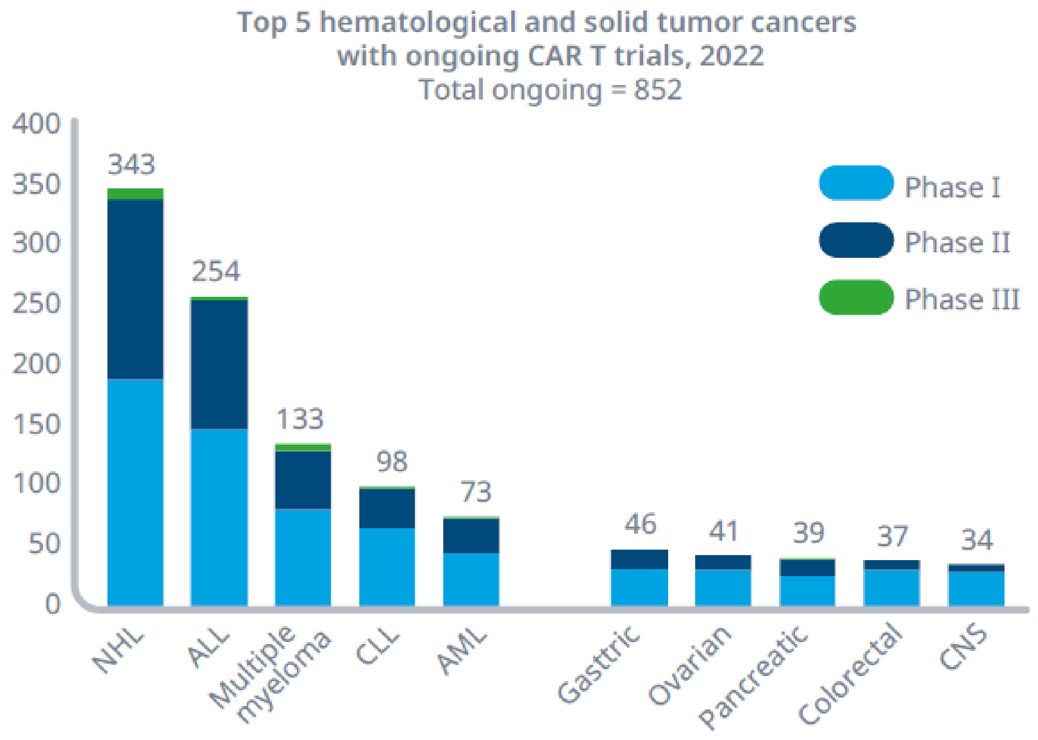
Top 8 Deals by tot. deal value (> $1 Bn) (disclosed value only)					
	Company	Partner	Focus	Deal value (US$ Bn)	Announced Month
1	Akeso Biopharma	Summit Therapeutics	αPD-1xαVEGF BsAb	5.0	2022/09
2	Cytomx Therapeutics	Regeneron Pharmaceuticals	Probody platform	2.0	2022/11
3	Zymeworks	Jazz Pharmaceuticals	Zanidatamab(αHER2 BsAb)	1.8	2022/10
4	MacroGenics	Gilead	MGD024(αCD3 x αCD123 BsAb)	1.8	2022/10
5	Abpro	CellTrion	ABP102(αHER2 x αCD3 BsAb)	1.8	2022/09
6	Wuxi Biologics	GSK	Bi-, Multi-specific T cell Engaging Antibodies(TCE)	1.5	2023/01
7	Dren Bio Inc	Pfizer Inc	Targeted Myeloid Engager and Phagocytosis platform	1.0	2022/01
8	LAVA Therapeutics NV	Seagen Inc	Bispecific γδ T cell engager	0.7	2022/09

III-III. CGT(R&D 2022)

(Phase I to regulatory submission)



Source: Citeline Trialtrove, IQVIA Institute, Apr 2023.

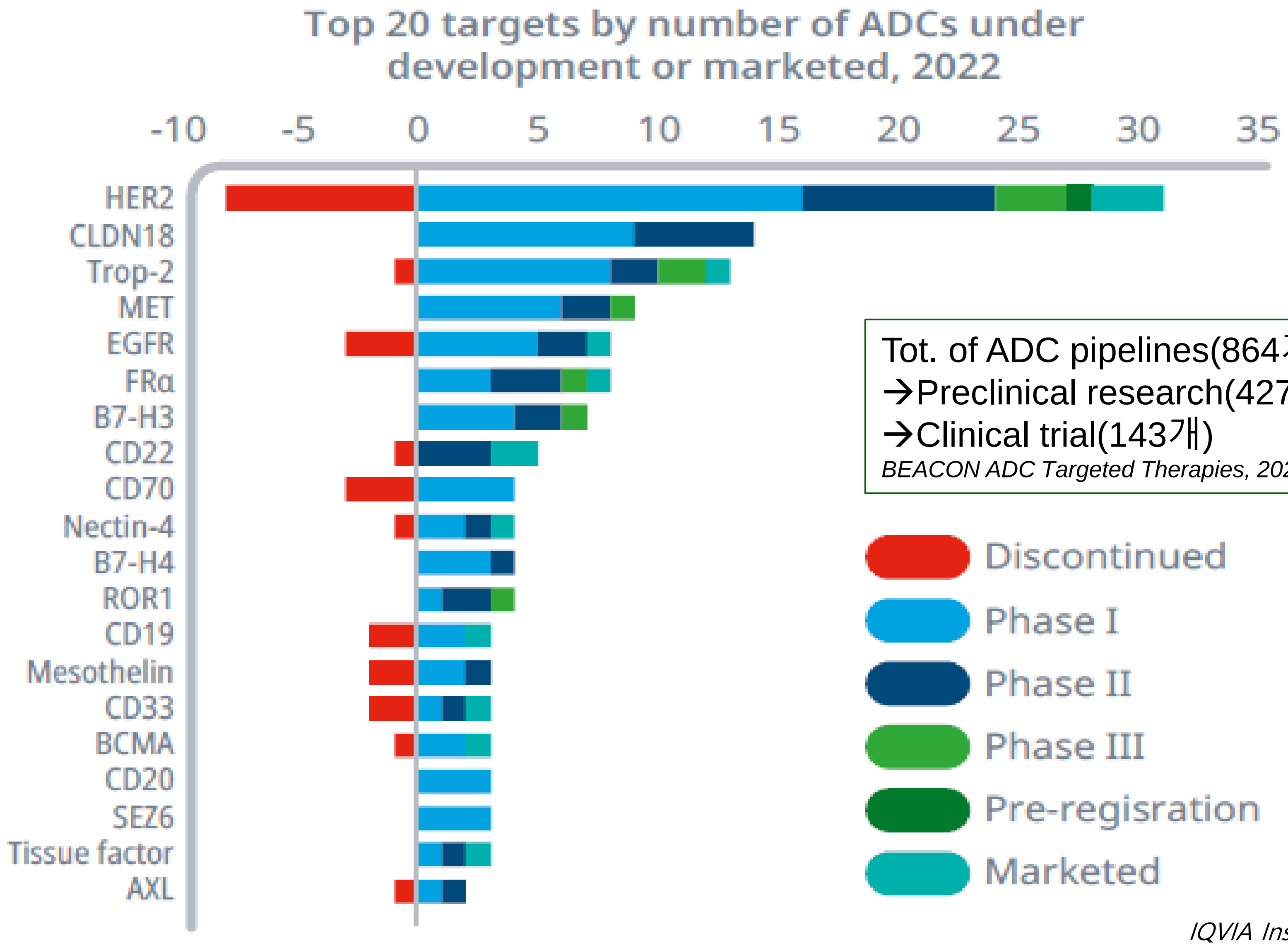


IQVIA Institute, Global Oncology Trends 2023

- ❖ **Oncology(42%)/Next-generation therapy**
- ❖ **CAR-T & CAR-T/NK** in Hema. & solid CA
- ❖ **('22)Tot. 250 pipelines, growing in Solid CA with UMN^{hi}**

III-IV. ADC(R&D 2022)

(Phase I to regulatory submission)



Tot. of ADC pipelines(864개)
→Preclinical research(427개)
→Clinical trial(143개)
BEACON ADC Targeted Therapies, 2022

IQVIA Institute, Global Oncology Trends 2023

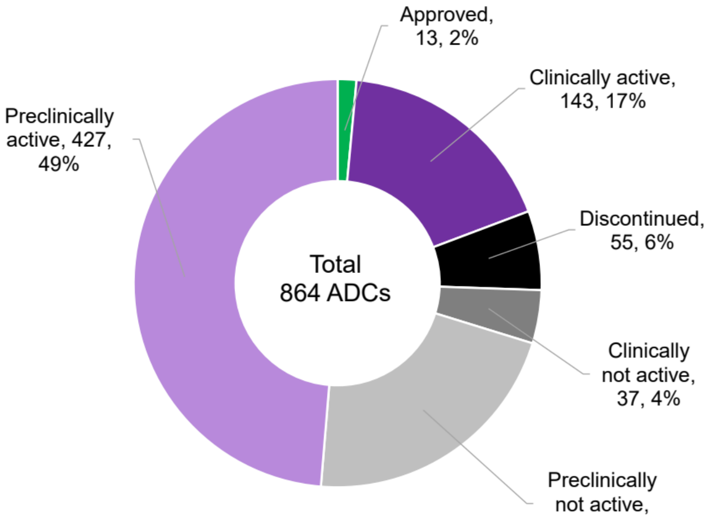
IV. ADC in Oncology

IV-I. FDA approval
IV-II. ADC(R&D 2022)
IV-III. Current Top 14 Deals(2022~2023.05.)
IV-IV. Major modality in current Dealmaking
IV-V. Ongoing clinical trials

IV-I. FDA approval

	FDA approved ADCs (Blood CA: 5, Solid CA: 6)						
	Approval	Company	ADC	Target	Indication	Linker	Payload
1	2000, 2017	Pfizer/Wyeth	Mylotarg	CD33	급성 골수성 백혈병	AcBut	Calicheamicin
2	2011	Seagen/Astellas	Adcetris	CD30	재발성 또는 난치성 호지킨 림프종 및 전신 역형성 대세포 림프종	Val-cit	MMAE
3	2013	Genentech/Roche	Kadcyla	HER2	Trastuzumab 내성 유방암	SMCC	DM-1
4	2017	Pfizer/Wyeth	Besponsa	CD22	재발성 또는 불응성 B세포 전구체 급성 림프모구 백혈병	AcBut	Calicheamicin
~~5~~	~~2018~~	~~AstraZeneca/Innate Pharma~~	~~Lumoxiti~~	~~CD22~~	~~털세포백혈병(Hairy cell leukemia)~~	~~Mc-VC-PABC~~	~~Pseudotox~~
6	2019	Genentech/Roche	Polivy	CD79	미만성 대 B-세포 림프종	Mc-Val-Cit	MMAE
7	2019	Seagen/Astellas	Padcev	Nectin-4	국소 진행성 또는 전이성 요로암	Mc-Val-Cit	MMAE
8	2019	AstraZeneca/Daiichi Sankyo	Enhertu	HER2	절제 불가능 혹은 전이성 유방암 진행성 위암	Tetrapeptide	DXD
9	2020	Gilead/Immunomedics	Trodelvy	Trop-2	삼중음성 유방암	Carbonate	SN-38
~~10~~	~~2020~~	~~GSK~~	~~Blenrep~~	~~BCMA~~	~~재발성 또는 불응성 다발성 골수종~~	~~MC~~	~~MMAF~~
11	2021	ADC Therapeutics	Zynlonta	CD19	미만성 대 B-세포 림프종	Valine-Ala	PBD
12	2021	Seagen/Genmab	Tivdak	Tissue factor	재발성 또는 전이성 자궁경부암	Mc-Val-Cit	MMAE
13	2022	ImmunoGen	Elahere	FR-α	백금 저항성 난소암	sulfo-SPDB	DM4

IV-II. ADC(R&D 2022)

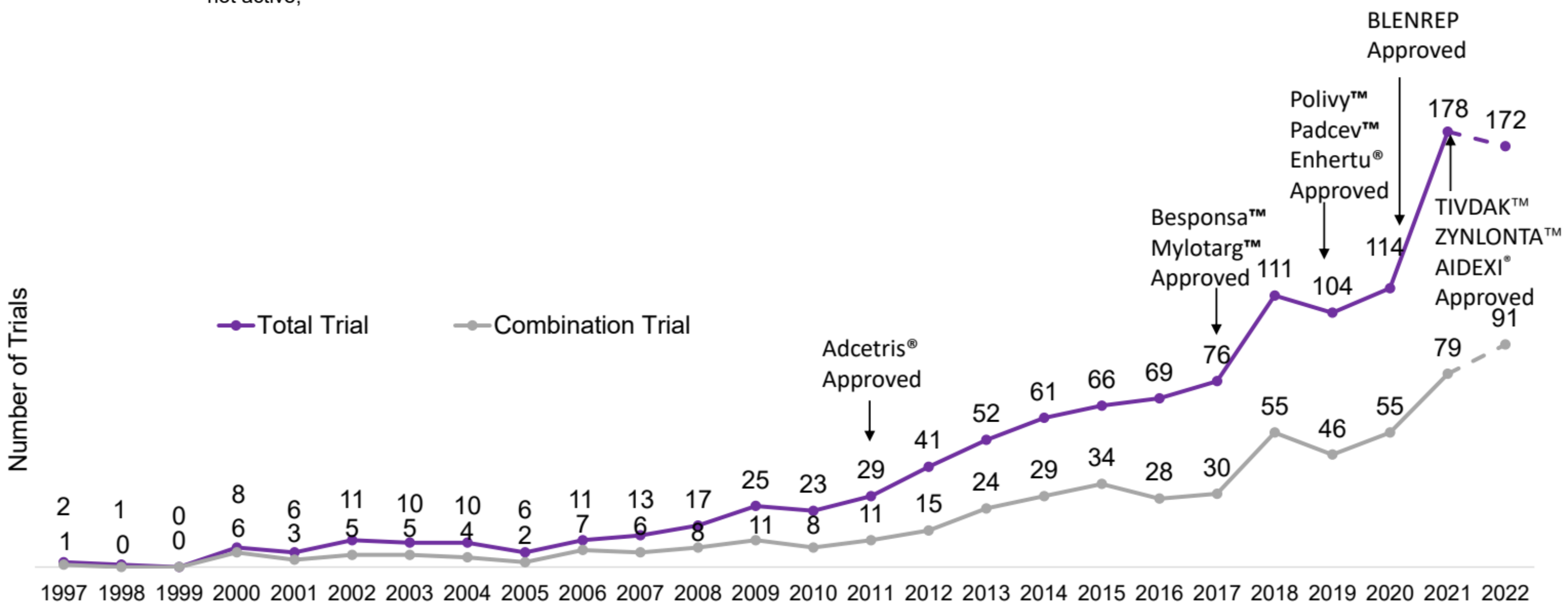


[Tot. 864 ADCs]

→ Active **preclinical** research 49% (427개)

→ Active **clinical** trial 17% (143개)

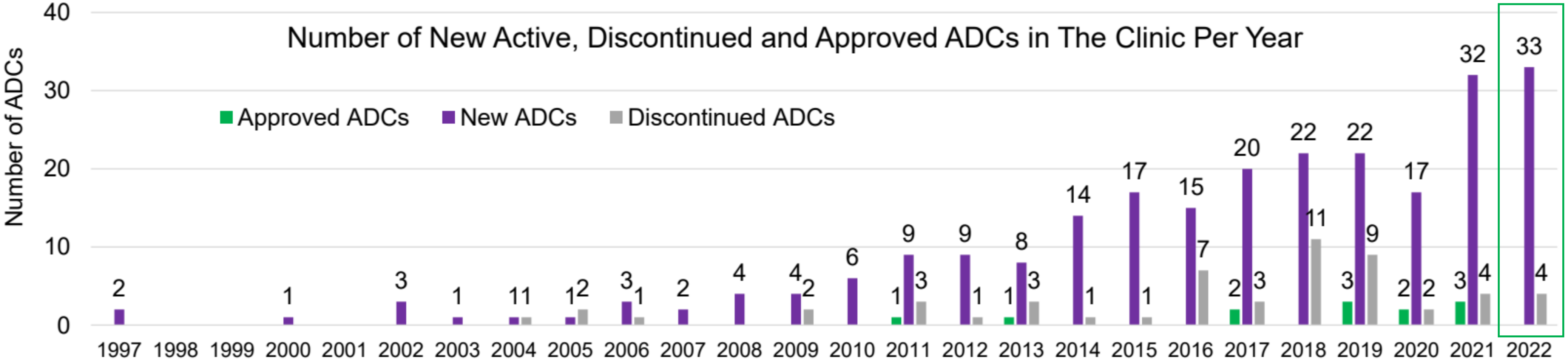
* **<u>33 new ADCs</u>** entered clinical trial this year.



BEACON ADC Targeted Therapies, 2022

IV-II. ADC(R&D 2022)

Retrieved from *BEACON ADC Targeted Therapies, 2022*



* Due to a lack of publicly available information, one discontinued drug and five active drugs are not included in this analysis. .

<u>[33 new ADCs initiated clinical trial]</u>

- Disease: Solid CA(29), Blood CA(4)
- Antigen

  \- HER2, CLDN18.2, TROP2, FR-α, B7-H4, B7-H3, Nectin-4, etc.

- Payload

  \- Tubulinι(7) > DNA damaging agent(5) > Topoisomeraseι (4) > ISAC(3) > RNA pol.ι(2), undisclosed(12)

  *Tubulinι: Eribulin(1), MMAE(6)
  *DNA damaging: Duocarmycin(1), PBD(2), Anthracycline(2)
  *Topoisomeraseι: Exatecan(2), Tubulysin(1), SN-38(1)
  *ISAC: TLR8(1), TLR9(1), STING(1)
  *RNA polι: Amanitin(2)

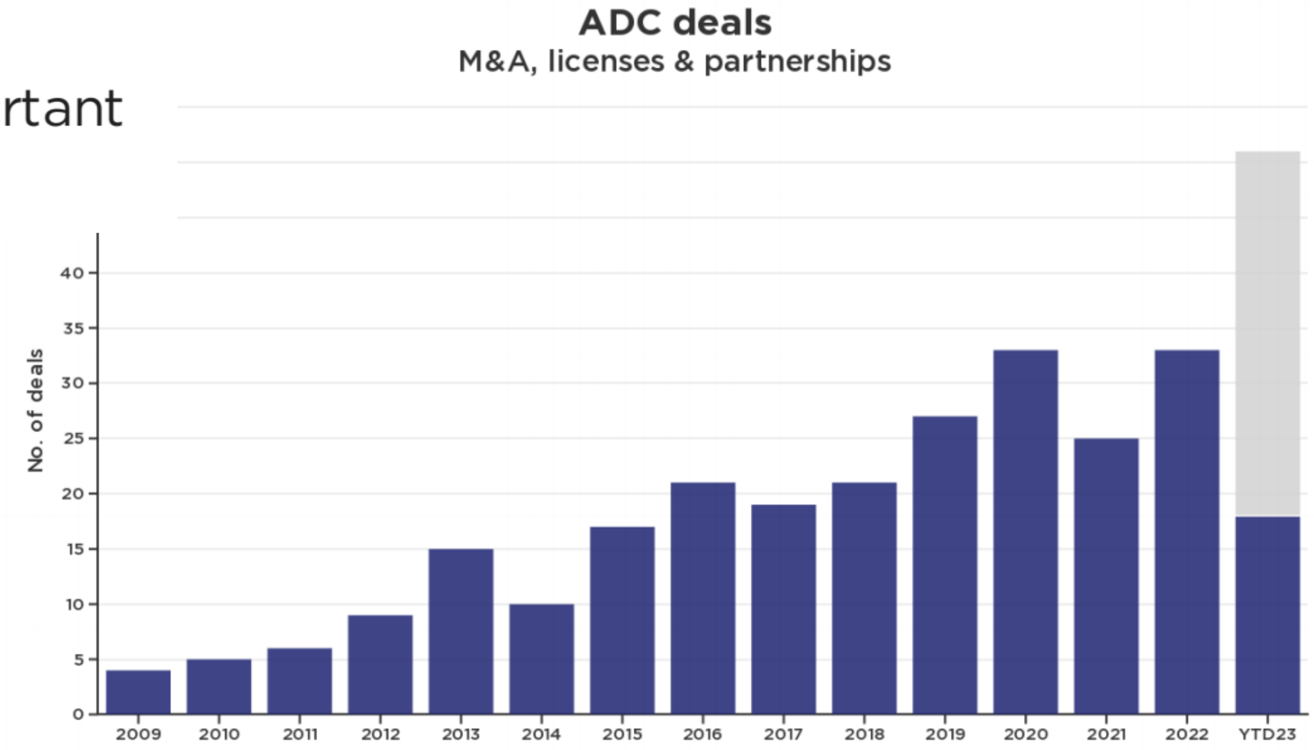
IV-III. Top 14 Deals(2022~2023.05.)

Top 13 Deals by tot. deal value (> $1 Bn) (disclosed value only)					
	Company	Partner	Focus	Deal value (US$ Bn)	Announced Month
1	Pfizer	Seagen	ADC pipelines including Adcertis, Padcev, Tivdak, Tukysa	43.0	2023/3
2	Merck & Co	Sichuan Kelun Biotech Biopharmaceutical	7 preclinical assets +α	9.3	2022/12
3	MacroGenics	Synaffix	7 preclinical assets	2.2	2023/3
4	Blissbio	Eisai	4 assets(including BB-1701)	2.0	2023/5
5	Amgen	Synaffix	GlycoConnect™, HydraSpace™, toxSYN™ 5 assets	2.0	2023/1
6	Eli Lilly	ImmunoGen	Camptothecin-linker payload technology	1.73	2023/2
7	BioNTech	Duality Biologics	Phase II asset(DB-1303/HER2), Preclinical asset(DB-1311)	1.7	2023/4
8	Mersana Therapeutics	GSK	Preclinical asset(XMT-2056/HER2-targeting STING agonistic ADC)	1.463	2022/8
9	Celltrion	Pinotbio	PINOT-ADC™	1.3	2022/10
10	Amgen	Legochem	ADCs, 5 targets selected by Amgen based on LCB's proprietary ConjuAll ADC	1.248	2022/12
11	Elevation Oncology	CSPC Megalith Pharmaceuticals	Phase I asset(EO-3021/CLDN18.2)	1.175	2022/7
12	Janssen Biotech	Mersana Therapeutics	3 ADCs co-development Dolasynthen platform	1.040	2022/2
13	Merck & Co	Sichuan Kelun Biotech Biopharmaceutical	SKB-264(Trop-2 ADC)	0.936	2022/7
14	Merck KGaA	Mersana Therapeutics	STING agonistic ADC(2 targets)	0.830	2022/12

IV-IV. Major modality in current Dealmaking

ADCs' recent resurgence is just the beginning

Dealmaking analysis shows antibody-drug conjugates becoming a strategically important modality for many cancer companies



Source: BCIQ • 2023 data as of May 8; gray bar estimates 2023 full-year number if the deal frequency seen so far were to remain steady. Chart excludes collaborations solely to test approved ADCs in combination trials.

BIOCENTURY

Biocentury, 2023

IV-V. Ongoing clinical trials

연번	개발단계	제품명/물질명	개발사	타겟	구분
1	적응증 확장(PDUFA 23.02)	Trodelvy	Gilead	Trop 2	고형암
2	적응증 확장(임상 3 결과 Readout 23년)	Enhertu	AstraZeneca/DaiichiSankyo	HER2	고형암
3	Pre-Registration(PDUFA 23.05.12)	trastuzumab duocarmazine	Byondis	HER2	고형암
4	임상3상	ARX-788	Ambrx Biopharma	HER2	고형암
5	임상3상	BAT-8001	Bio-Thera Solutions	HER2	고형암
6	임상3상	datopotamab deruxtecan	Daiichi Sankyo	Trop 2	고형암
7	임상3상	iodine i 131 apamistamab	Actinium Pharmaceuticals	CD45	혈액암
8	임상3상	patritumab deruxtecan	Daiichi Sankyo	HER3	고형암
9	임상3상	SHRA-1811	Jiangsu Hengrui Medicine	HER2	고형암
10	임상3상	SKB-264	Merck & Co	Trop 2	고형암
11	임상3상	TAA-013	TOT Biopharm	HER2	고형암
12	임상3상	telisotuzumab vedotin	AbbVie	c Met	고형암
13	임상3상	TLX-591	Telix Pharmaceuticals	PSMA	고형암
14	임상3상	tusamitamab ravtansine	Sanofi/ImmunoGen	CEACAM5	고형암
15	임상3상	upifitamab rilsodotin	Mersana Therapeutics	NaPi2b	고형암
16	임상3상	zilovertamab vedotin	Merck & Co	ROR1	혈액암

※ 출처: IBK 투자증권, 기업분석 자료(2022.11.)

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V. Learning & Takeaways

Learning & Key Takeaways

I. Dealmaking trends in 2022

- M&A: volume ↓ & value ↓ (volume: 196(2021) → 171(2022), value: $153Bn(2021) → $87Bn(2022))
  - Big Pharma → Small-to-Mid company, Big Pharma's patent cliff
  - Various modalities, Oncology/Immunology/CNS, etc.
- Partnership: volume ↓ & value(=) (volume: 1,200(2021) → 971(2022), value: $178Bn(2021) → $179Bn(2021))
  - Big Pharma ↔ Smaller company
  - Oncology, various modalities
- There were no mega deals in 2022.

II. Oncology R&D in 2022

- Oncology is a key driver in the global medicine market. ($377Bn, CAGR: 13-16%)
- Novel target & modality emerging: ADC, BsAb, Cell & Gene therapy, small molecule with new target/MoA, etc.
- Needs: Data-driven evidences(ex: clinical trials, RWD)
- ADC
  - Growing, be a game-changer with significant clinical benefit
  - Global Big Pharma's key interest

2023 국내 파이프라인 조사

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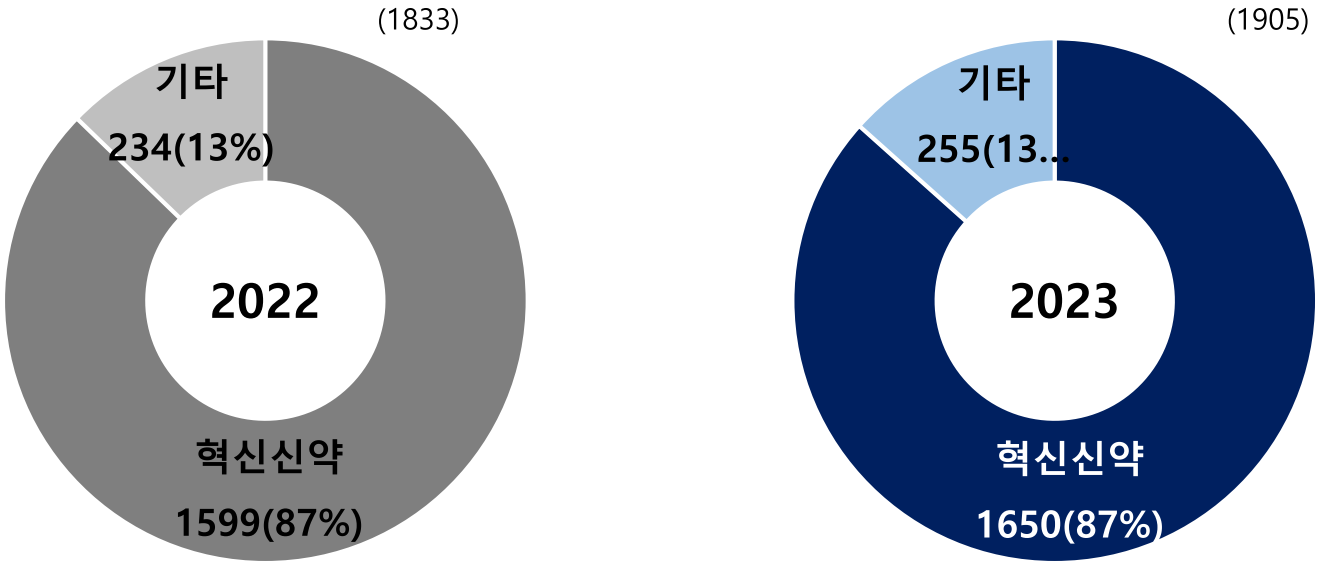
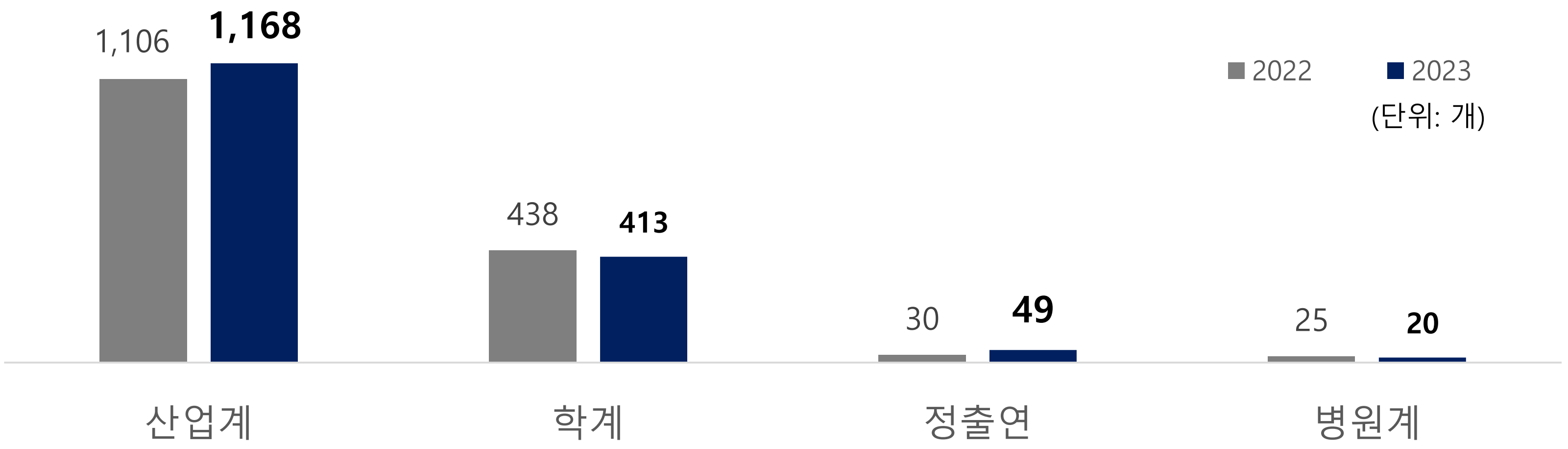
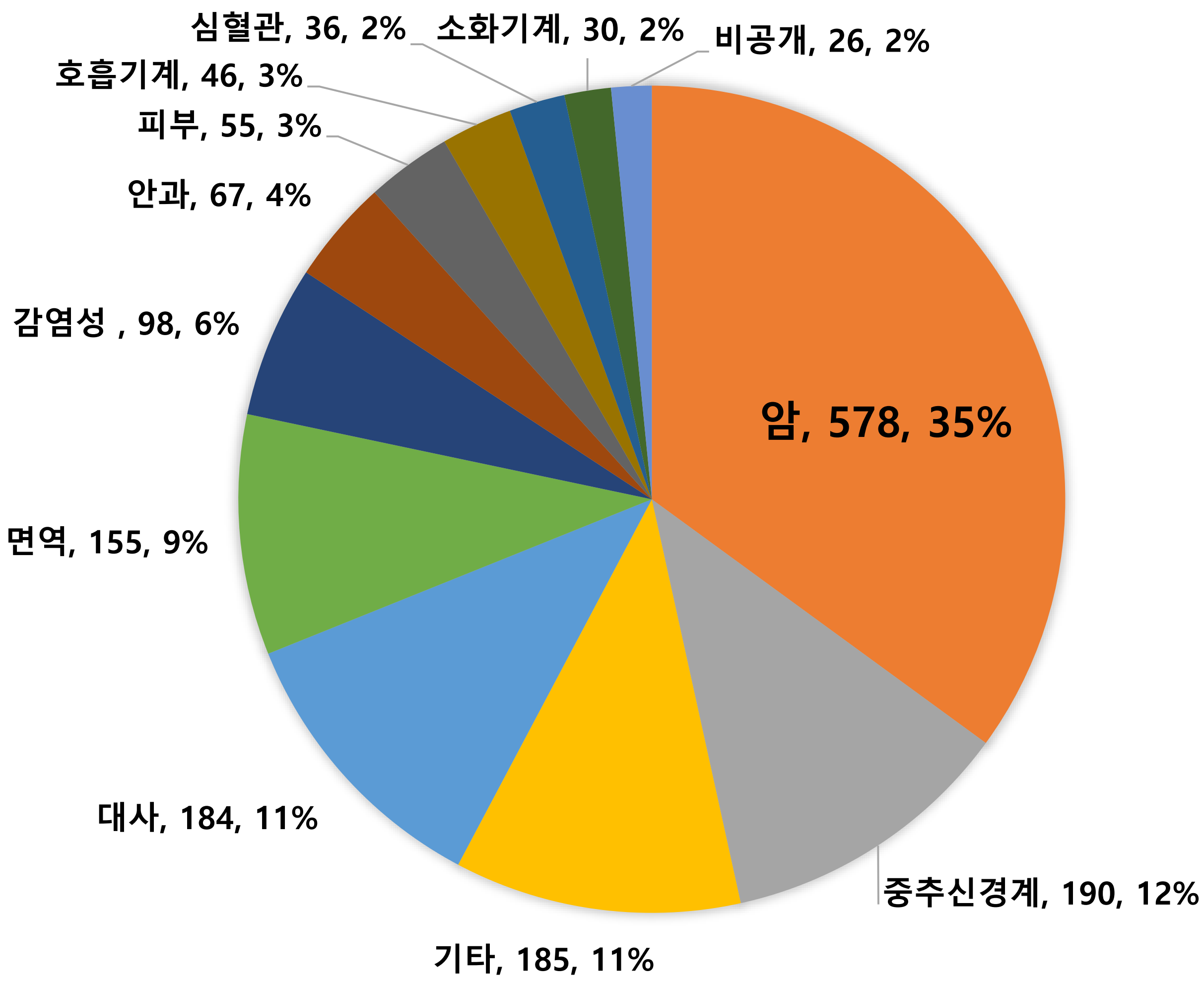
혁신신약



기관



질환별 파이프라인

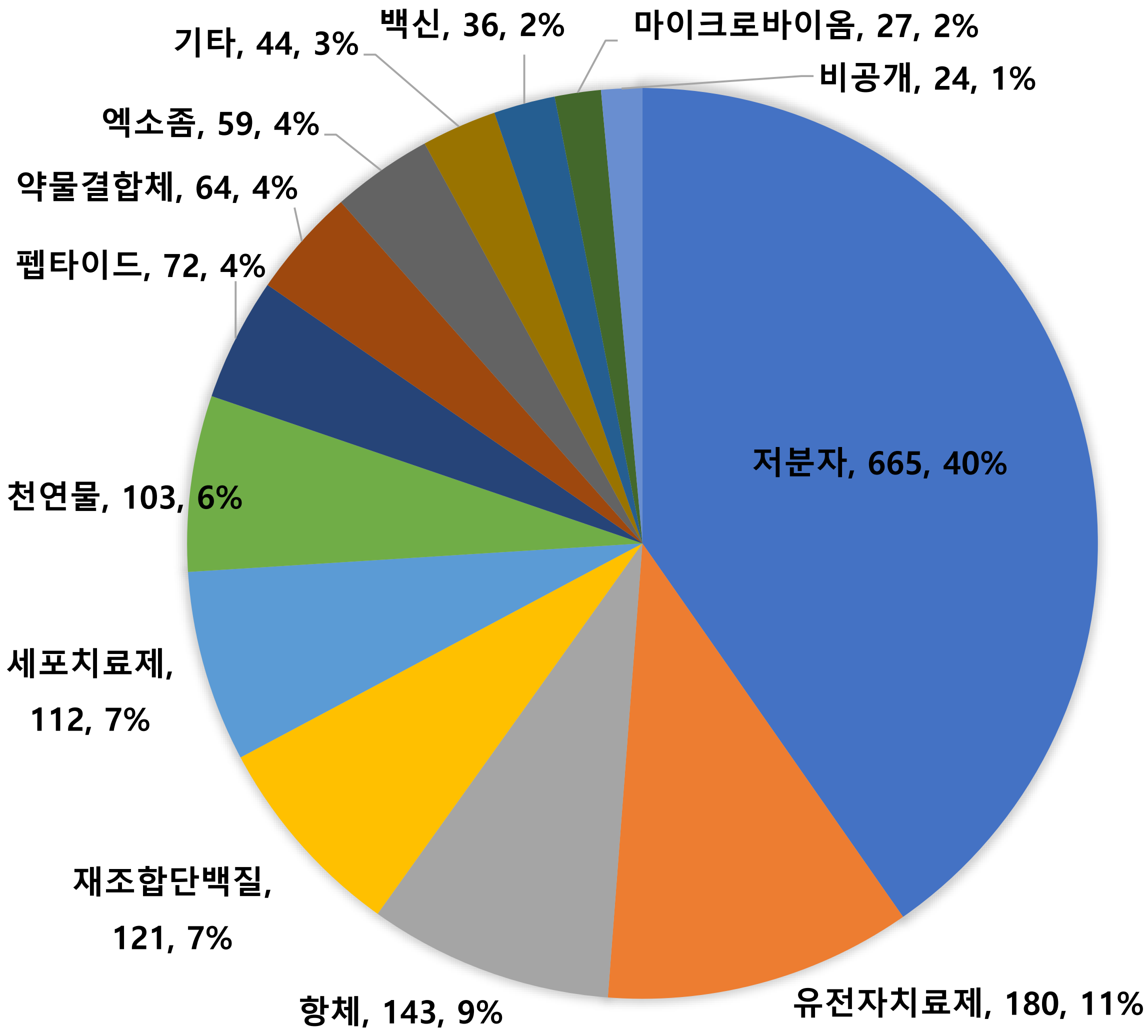


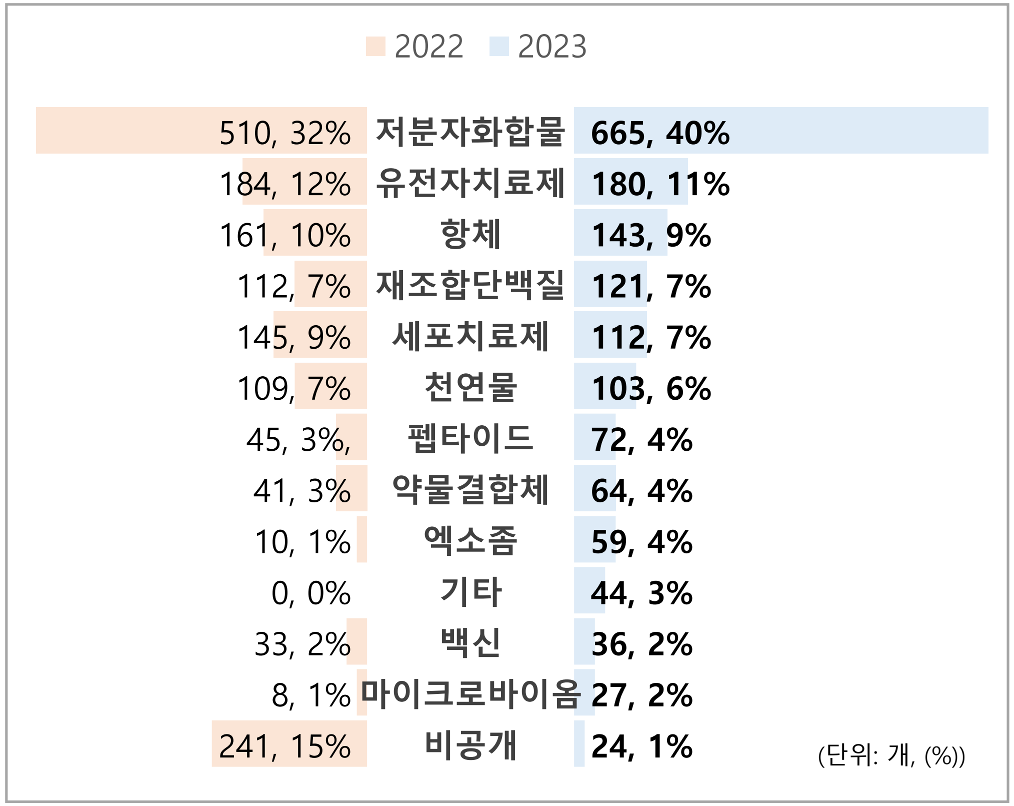
(단위: 개, %)

2022		2023
40%, 647	암	35%, 578
12%, 191	중추신경계	12%, 190
12%,187	기타	11%, 185
8%, 129	대사	11%,184
8%, 120	면역	9%, 155
6%, 89	감염성	6%, 98
4%, 67	안과	4%,67
1%, 22	피부질환	3%, 55
3%, 46	호흡기계	3%,46
3%,47	심혈관	2%, 36
2%, 37	소화기	2%, 30
1%, 17	비공개	2%, 26

(단위: 개, %)

모달리티별


저분자, 665, 40%
유전자치료제, 180, 11%
항체, 143, 9%
재조합단백질,
121, 7%
세포치료제,
112, 7%
천연물, 103, 6%
펩타이드, 72, 4%
약물결합체, 64, 4%
엑소좀, 59, 4%
기타, 44, 3%
백신, 36, 2%
마이크로바이옴, 27, 2%
비공개, 24, 1%


2022
2023
510, 32% 저분자화합물 665, 40%
184, 12% 유전자치료제 180, 11%
161, 10% 항체 143, 9%
112, 7% 재조합단백질 121, 7%
145, 9% 세포치료제 112, 7%
109, 7% 천연물 103, 6%
45, 3%, 펩타이드 72, 4%
41, 3% 약물결합체 64, 4%
10, 1% 엑소좀 59, 4%
0, 0% 기타 44, 3%
33, 2% 백신 36, 2%
8, 1% 마이크로바이옴 27, 2%
241, 15% 비공개 24, 1%
(단위: 개, (%))

국내 파이프라인 및 KDDF 지원현황