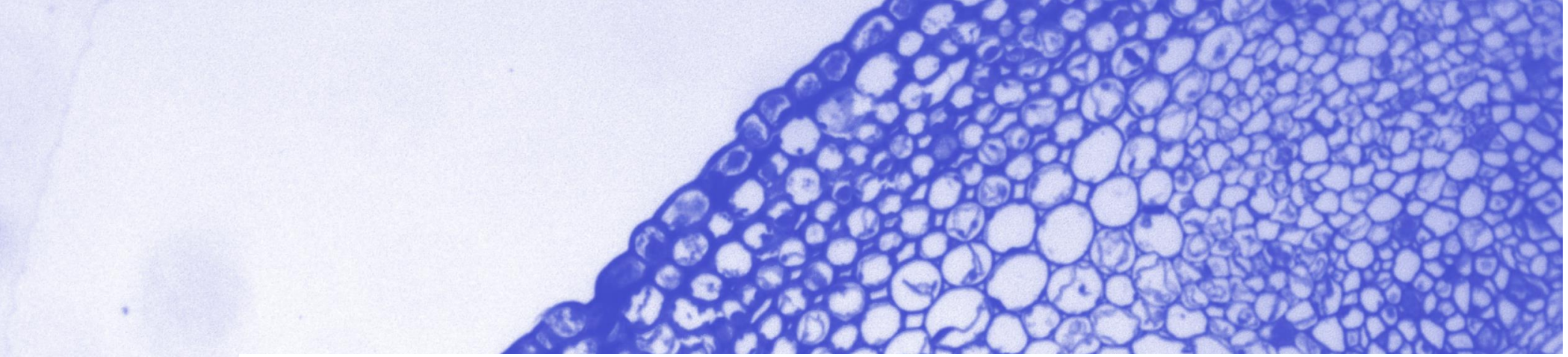
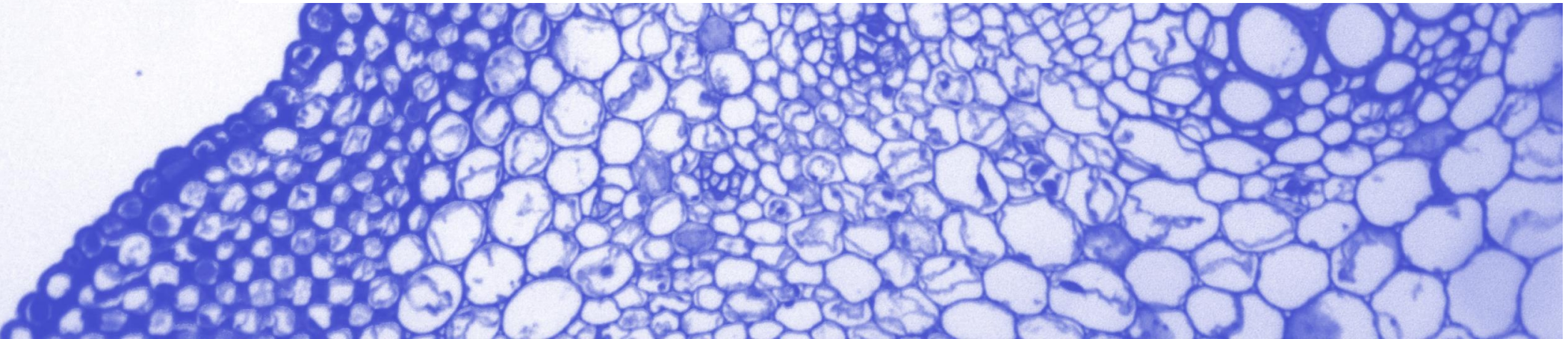


Gene, Cell, & RNA Therapy Landscape

Q1 2021 Quarterly Data Report

Q1 2021



American Society of Gene + Cell Therapy

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About the authors

American Society of Gene + Cell Therapy

The American Society of Gene & Cell Therapy (ASGCT) is the primary professional membership organization for scientists, physicians, patient advocates, and other professionals with interest in gene and cell therapy.

Our members work in a wide range of settings including universities, hospitals, government agencies, foundations, biotechnology and pharmaceutical companies. ASGCT advances knowledge, awareness, and education leading to the discovery and clinical application of gene and cell therapies to alleviate human disease to benefit patients and society. For more information visit ASGCT.org.

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Informa Pharma Intelligence powers a full suite of analysis products – Datamonitor Healthcare™, Sitetrove™, Trialtrove™, Pharmaprojects™, Biomedtracker™, Scrip™, Pink Sheet™ and In Vivo™ – to deliver the data needed by the pharmaceutical and biomedical industry to make decisions and create real-world opportunities for growth.

With more than 400 analysts, journalists, and consultants keeping their fingers on the pulse of the industry, no key disease, clinical trial, drug approval or R&D project isn't covered through the breadth and depth of data available to customers. For more information visit pharmaintelligence.informa.com.

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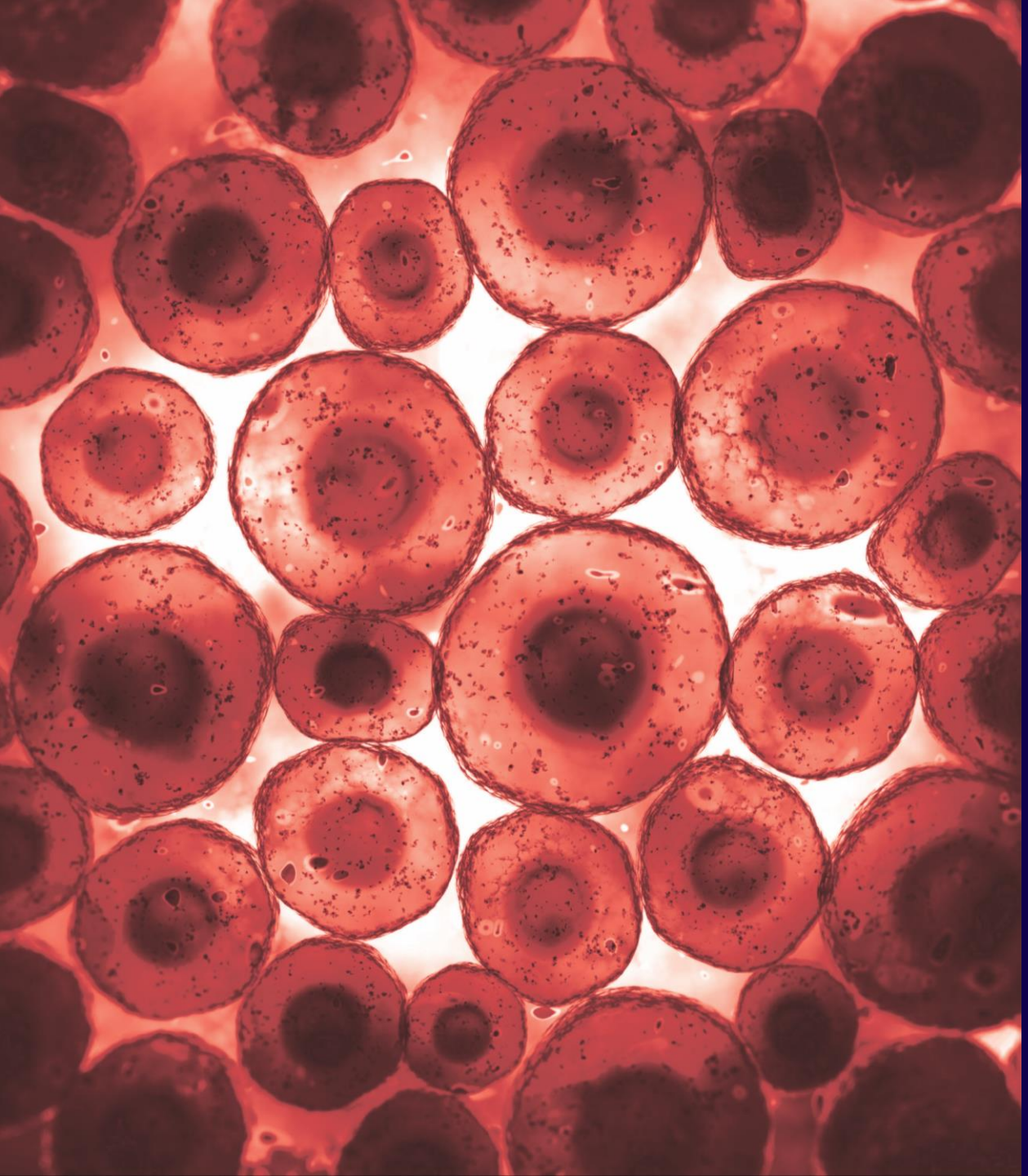

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American Society of Gene + Cell Therapy

Welcome from ASGCT

Welcome to the first in a series of quarterly reports on the clinical development of the gene therapy field. ASGCT is thrilled to partner with Informa Pharma Intelligence to provide a data-driven, comprehensive look at clinical and pre-clinical progress across gene and cell therapies throughout the world to our members, and to the community at large.

This collection of reports will grow over time to show the expansion of the field, reflect clinical progress, and reveal patterns in therapeutic areas under development.

To that end, the data show unequivocally that gene, cell, and RNA therapies continue to grow rapidly with nearly 3,500 therapies in preclinical and clinical development throughout the world. While the overwhelming majority of therapies target cancers (and the second most common therapeutic target is neurological disorders), there are currently 77 therapies in Phase III clinical trials across all gene, cell, and RNA therapies.

Perhaps most impressive in all this report, nearly $480M in start-up financing has been acquired across 13 companies throughout the gene, cell, and RNA therapeutics industry.

ASGCT extends a massive thanks to our data partners at Informa Pharma Intelligence in collecting and curating all this revealing information, and together we look forward to your response to this and future reports.

Key takeaways from Q1 2021

Oncology remains most active therapeutic area

- More than 1,200 therapies are in development targeting cancer at the end of Q1 2021 (preclinical to preregistration)

Neurological disease (unspecified) is the most common non-oncology disease area targeted by gene therapy

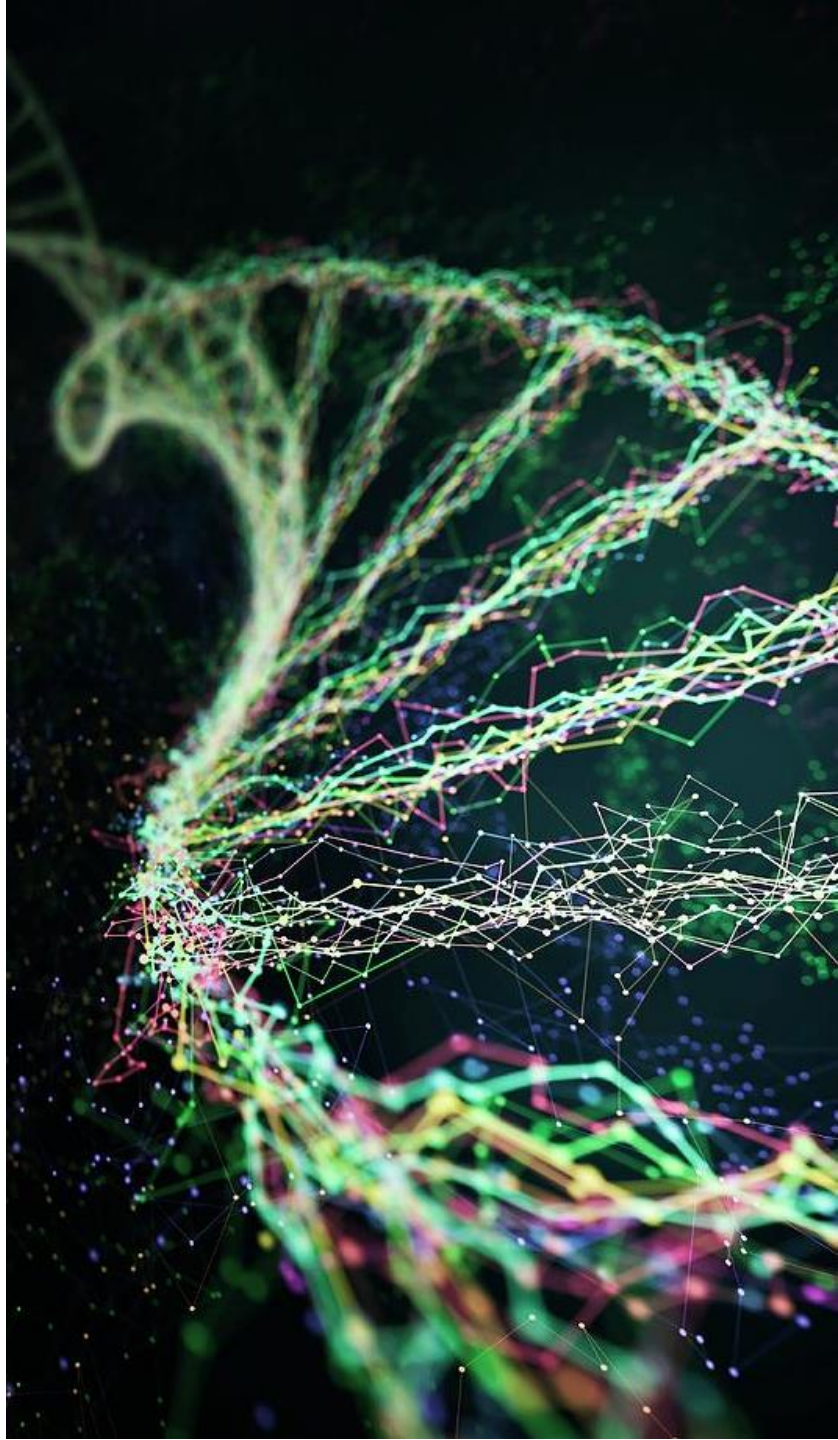
- 35 therapies are in development (preclinical to preregistration stage)

Astellas is most active preclinical developer

- Firm has 23 candidates currently in preclinical development
- Next most active companies: Sarepta, China Immunotech, Taysha Gene Therapies, Yake, Bayer, and Takeda

The volume of start-up financings for gene, cell, and RNA therapy companies—13 companies—decreased from Q4 2020 but increased from a year ago

- Gene, cell, and RNA therapy start-up companies raised an aggregate $480M through seed and Series A financings, including a pair of $85M Series A rounds from Notch Therapeutics and LEXEO Therapeutics



Approved therapies

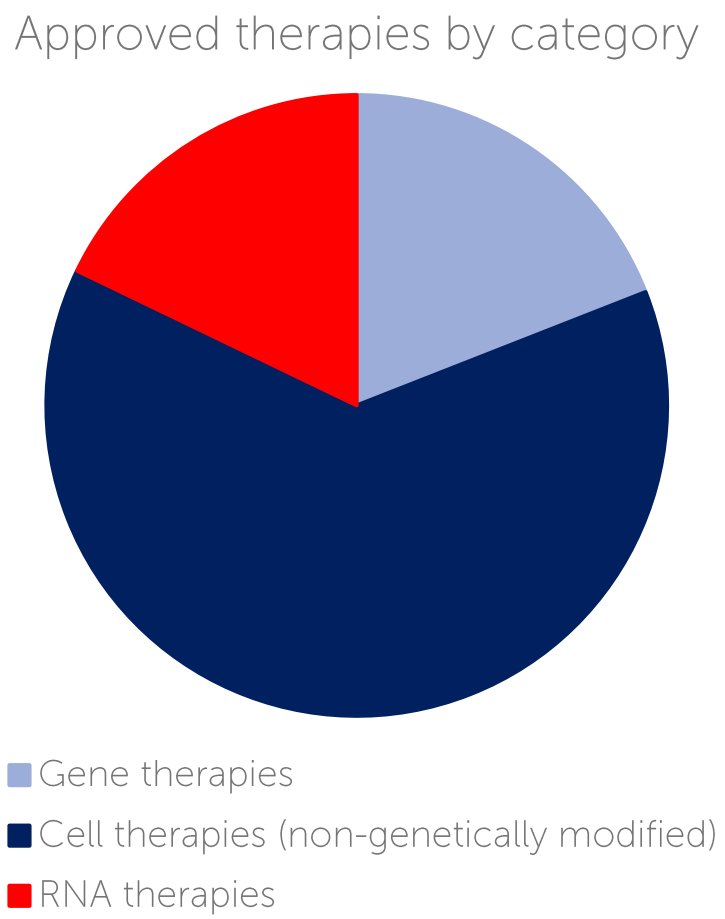
Q1 2021

American Society of Gene + Cell Therapy

Approved gene, cell, and RNA therapies

Globally, for clinical use, there are:

- 16 gene therapies approved (including genetically modified cell therapies)
- 15 RNA therapies approved
- 53 non-genetically modified cell therapies approved



Source: Pharmaprojects | Informa, April 2021

American Society of Gene + Cell Therapy

Approved gene therapies

Product name	Generic name	Year first approved	Disease(s)	Countries approved	Originator company
Gendicine	recombinant p53 gene	2004	Head and neck cancer	China	Shenzhen SiBiono GeneTech
Oncorine	E1B/E3 deficient adenovirus	2005	Head and neck cancer; nasopharyngeal cancer	China	Shanghai Sunway Biotech
Rexin-G	mutant cyclin-G1 gene	2006	Solid tumors	Philippines	Epeius Biotechnologies
Neovasculgen	vascular endothelial growth factor gene	2011	Peripheral vascular disease; limb ischemia	Russian Federation	Human Stem Cells Institute
Imlygic	talimogene laherparepvec	2015	Melanoma	US, EU	Amgen
Strimvelis	autologous CD34+ enriched cells	2016	Adenosine deaminase deficiency	EU	Orchard Therapeutics
Kymriah	tisagenlecleucel-t	2017	Acute lymphoblastic leukemia; diffuse large B-cell lymphoma, including follicular lymphoma	US, EU, Japan	Novartis
Luxturna	voretigene neparvovec	2017	Leber's congenital amaurosis; retinitis pigmentosa	US, EU	Spark Therapeutics (Roche)
Yescarta	axicabtagene ciloleucel	2017	Diffuse large B-cell lymphoma, including DLBCL arising from follicular lymphoma.	US, EU	Kite Pharma (Gilead)
Collategene	beperminogene perplasmid	2019	Critical limb ischemia	Japan	AnGes
Zolgensma	onasemnogene abeparvovec	2019	Spinal muscular atrophy	US, EU, Japan	Novartis
Zynteglo	lentiviral beta-globin gene transfer	2019	Transfusion-dependent beta thalassemia	EU	bluebird bio
Tecartus	brexucabtagene autoleucel	2020	Mantle cell lymphoma	US	Kite Pharma (Gilead)
Libmeldy	OTL-200	2020	Metachromatic leukodystrophy	EU	Orchard Therapeutics
Breyanzi	lisocabtagene maraleucel	2021	DLBCL, including DLBCL arising from indolent lymphoma and follicular lymphoma grade 3B	US	Celgene (Bristol Myers Squibb)
Abecma	idecabtagene vicleucel	2021	Multiple myeloma	US	bluebird bio

Source: Pharmaprojects, Biomedtracker | Informa, April 2021

Approved RNA therapies

Product name	Generic name	Year first approved	Disease(s)	Countries approved	Originator company
Kynamro	mipomersen sodium	2013	Homozygous familial hypercholesterolaemia	US, Argentina, South Korea	Ionis Pharmaceuticals
Exondys 51	eteplirsen	2016	Dystrophy, Duchenne muscular	US	Sarepta Therapeutics
Spinraza	nusinersen	2016	Muscular atrophy, spinal	US, Australia, Canada, EU, Japan, UK	Ionis Pharmaceuticals
Tegsedi	inotersen	2018	Amyloidosis, transthyretin-related hereditary	US, Canada, EU, UK	Ionis Pharmaceuticals
Onpattro	patisiran	2018	Amyloidosis, transthyretin-related hereditary	US, Canada, EU, Japan, UK	Alnylam
Vyondys 53	golodirsen	2019	Dystrophy, Duchenne muscular	US	Sarepta Therapeutics
Waylivra	volanesorsen	2019	Hypertriglyceridaemia; Lipoprotein lipase deficiency	EU, UK	Ionis Pharmaceuticals
Comirnaty	COVID-19 vaccine, BioNTech	2020	Infection, coronavirus, novel coronavirus prophylaxis	US, Canada, EU, Iceland, Japan, Mexico, New Zealand, Rwanda, Singapore, UAE, UK	BioNTech
Moderna COVID-19 vaccine	COVID-19 vaccine, Moderna	2020	Infection, coronavirus, novel coronavirus prophylaxis	US, Canada, Hungary, Israel	Moderna Therapeutics
Givlaari	givosiran	2020	Porphyria	US, Germany, Italy	Alnylam
Oxlumo	lumasiran	2020	Hyperoxaluria	US, Germany	Alnylam
Ampligen	rintatolimod	2020	Chronic fatigue syndrome	Argentina	AIM ImmunoTech
Viltepso	viltolarsen	2020	Dystrophy, Duchenne muscular	US, Japan	NS Pharma
Leqvio	inclisiran	2020	Atherosclerosis; Heterozygous familial hypercholesterolaemia; Hypercholesterolaemia; Homozygous familial hypercholesterolaemia	EU, UK	Alnylam
Amondys 45	casimersen	2021	Dystrophy, Duchenne muscular	US	Sarepta Therapeutics

Source: Pharmaprojects, Biomedtracker | Informa, April 2021

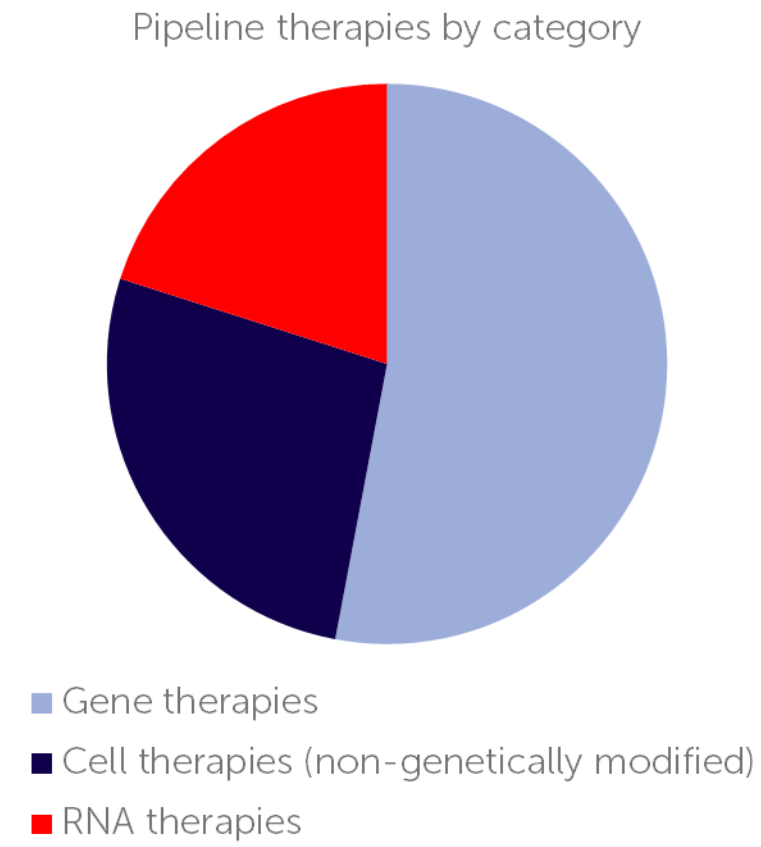
Pipeline overview

Q1 2021

American Society of Gene + Cell Therapy

Pipeline of gene, cell, and RNA therapies

- 3,474 therapies in development, ranging from preclinical through preregistration
- Gene therapy, including genetically-modified cell therapies such as CAR T-cell therapies, account for 53% of therapies in development
- Non-genetically modified cell therapies account for 27% of gene, cell, and RNA therapies



Source: Pharmaprojects| Informa, April 2021

Gene therapy pipeline

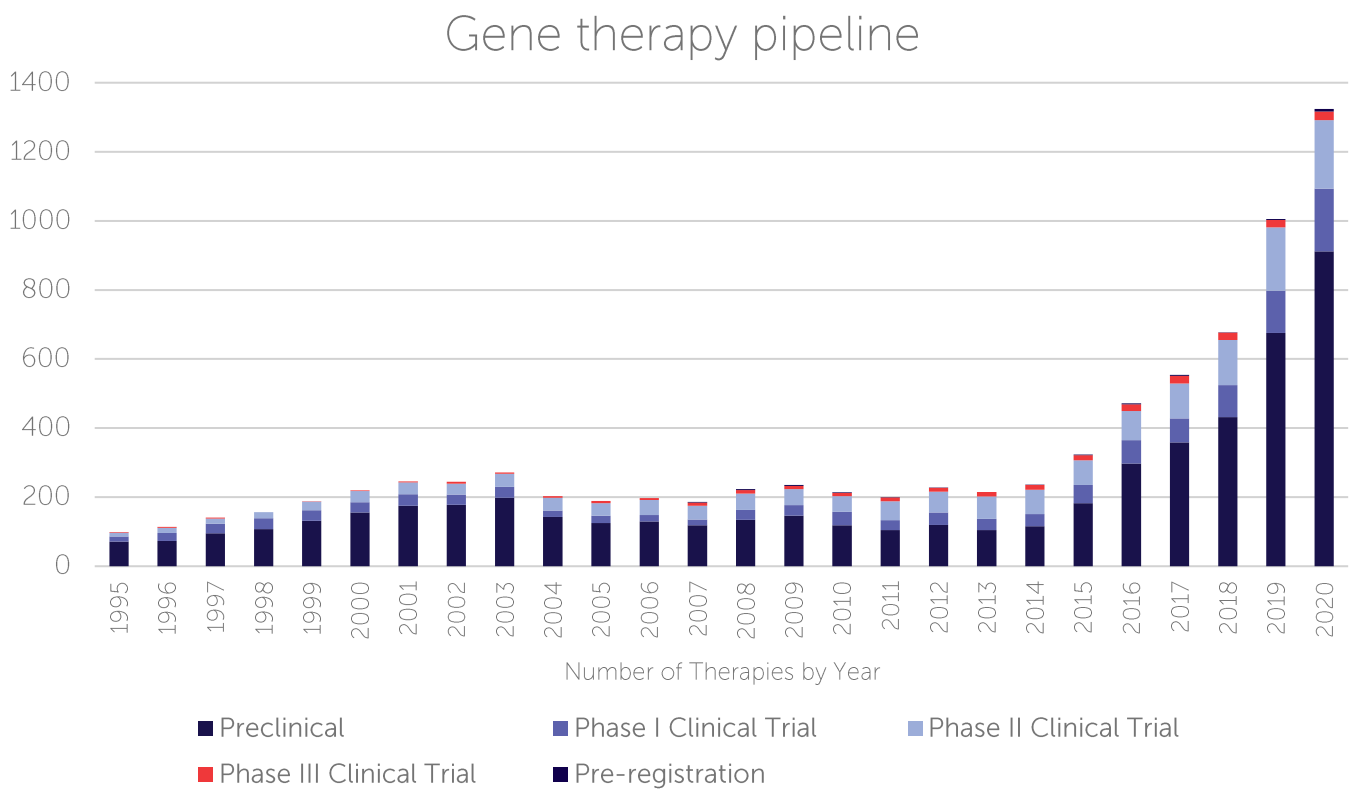
Gene therapy and genetically modified cell therapies

Q1 2021

American Society of Gene + Cell Therapy

Gene therapy pipeline

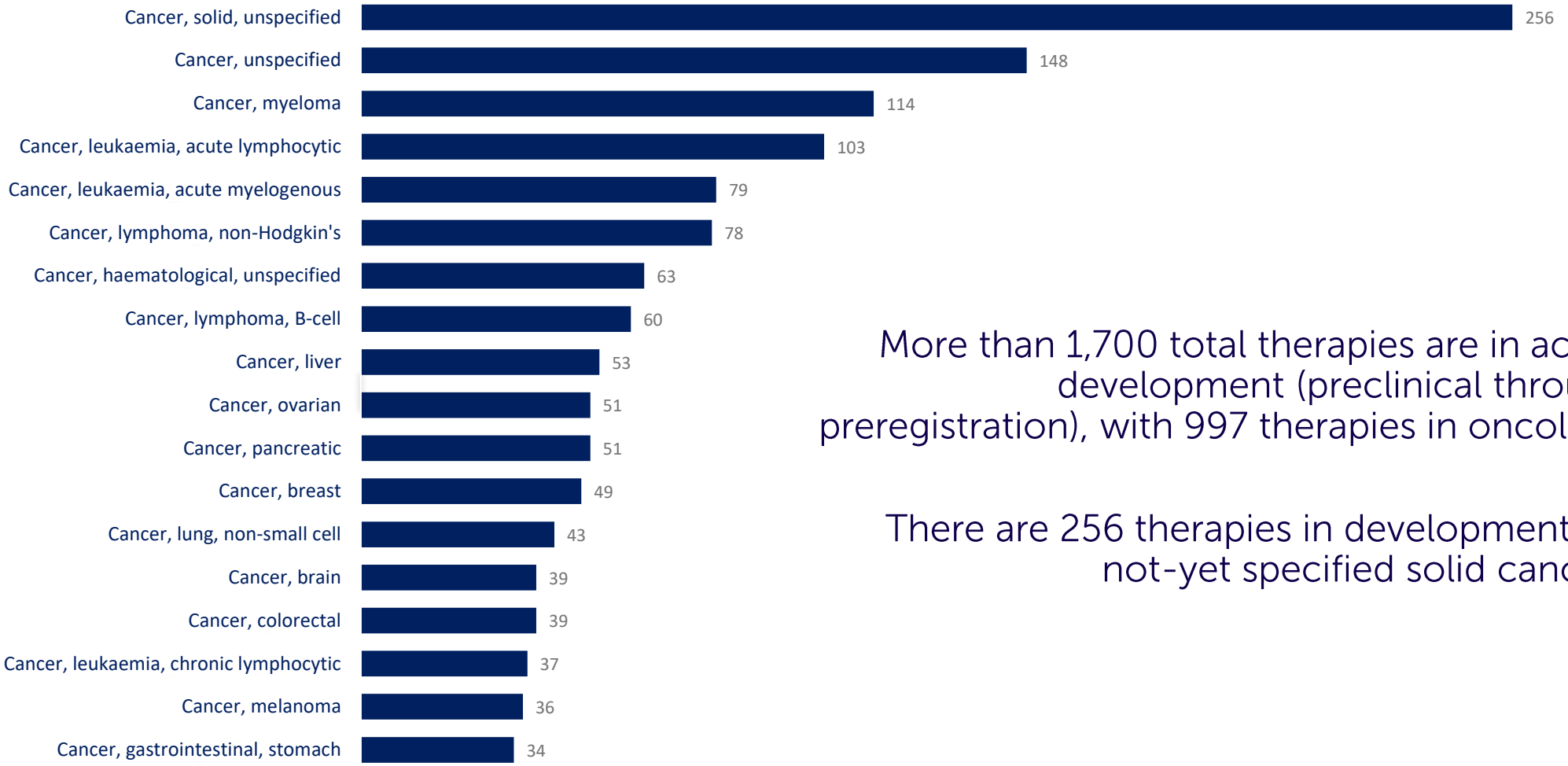
- Number of gene therapies, including genetically modified cell therapies, has grown exponentially since 2014
- Preclinical pipeline supports early-stage discoveries
- In 2020:
  - Of more than 1,300 therapies in development (preclinical through preregistration), 69% of candidates were in preclinical development
  - 25 therapies were in Phase III clinical development



Source: Pharmaprojects| Informa, April 2021

American Society of Gene + Cell Therapy

Gene therapy pipeline: Most common cancers targeted



More than 1,700 total therapies are in active development (preclinical through preregistration), with 997 therapies in oncology

There are 256 therapies in development for not-yet specified solid cancers

Source: Pharmaprojects | Informa, April 2021

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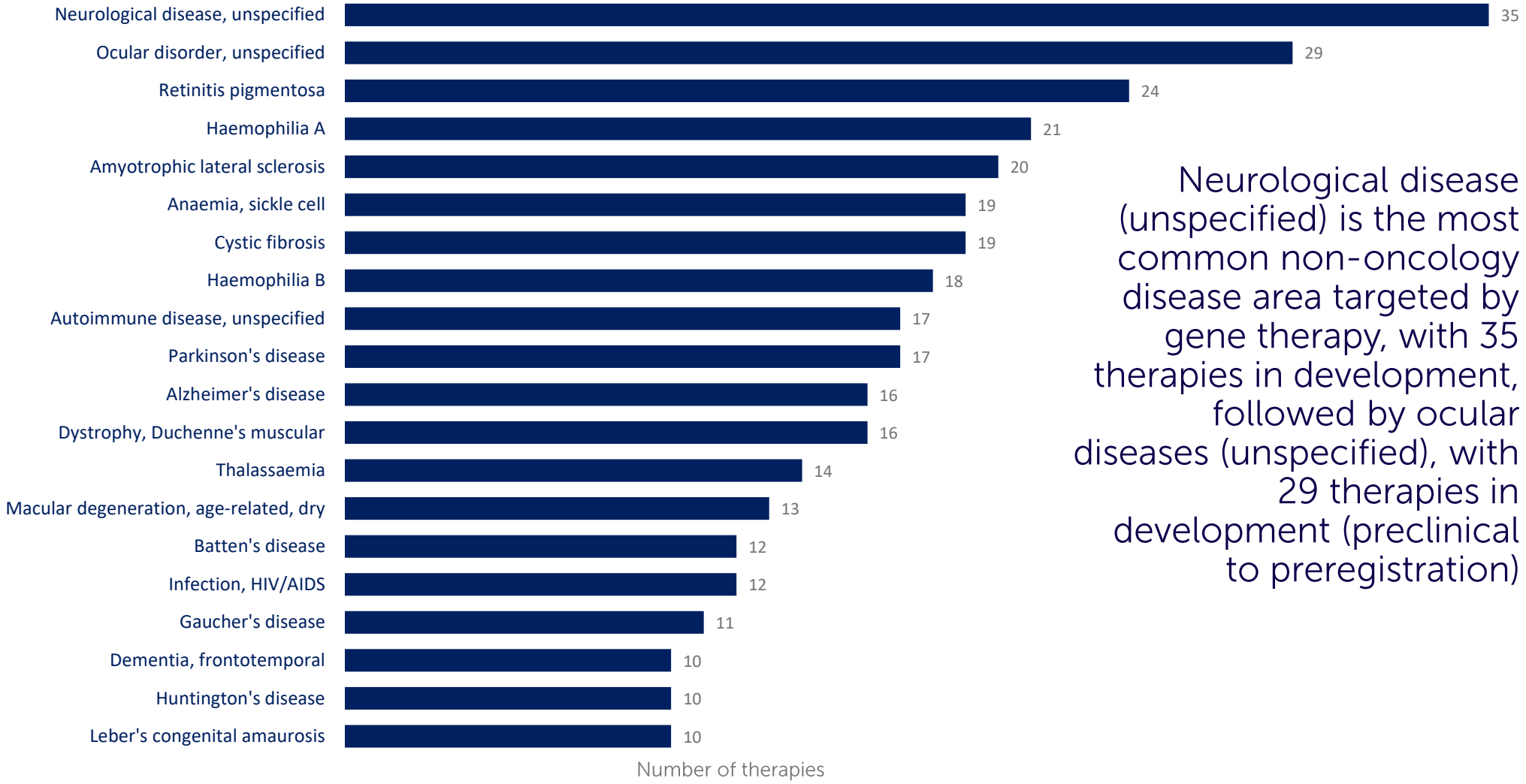
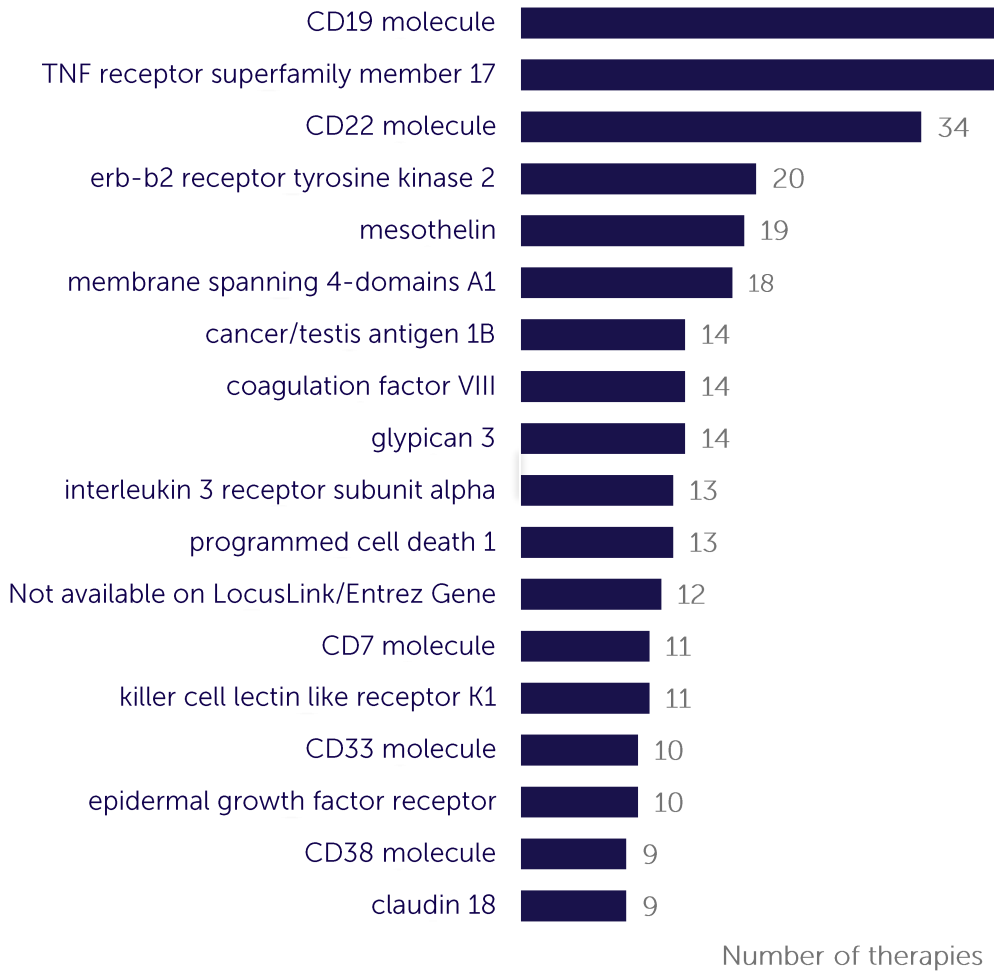
Gene therapy pipeline: Most common non-oncology diseases targeted



Neurological disease (unspecified) is the most common non-oncology disease area targeted by gene therapy, with 35 therapies in development, followed by ocular diseases (unspecified), with 29 therapies in development (preclinical to preregistration)

Source: Pharmaprojects | Informa, April 2021

Gene therapy pipeline: Most common targets



Of the gene therapies in preclinical through preregistration stage in which targets are disclosed:

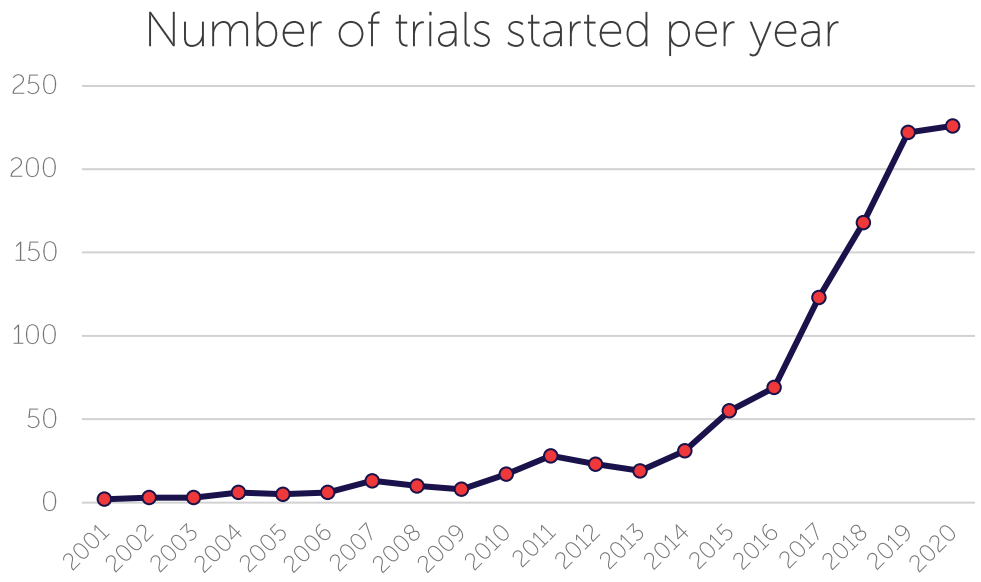
CD19 remains the most common – this target is utilized by four of the approved CAR T-cell therapies (Kymriah, Yescarta, Tecartus, and Breyanzi)

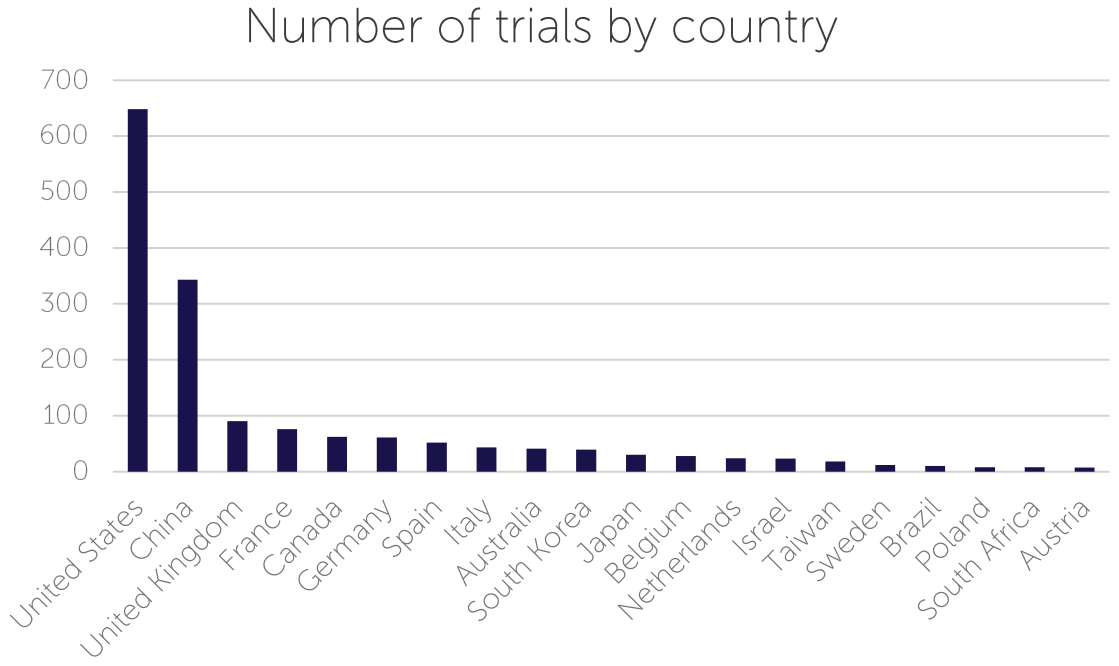
B-cell maturation antigen (BCMA), also known as TNF receptor superfamily member 17, is the next most popular target. This target is utilized by the recently approved CAR T-cell therapy, Abecma

Source: Pharmaprojects | Informa, April 2021

Gene therapy clinical trial activity

- Exponential increase in the number of gene therapy clinical trials initiated since 2013
- The United States hosts the most clinical trials for gene therapy, followed by China





Source: Trialtrove| Informa, April 2021

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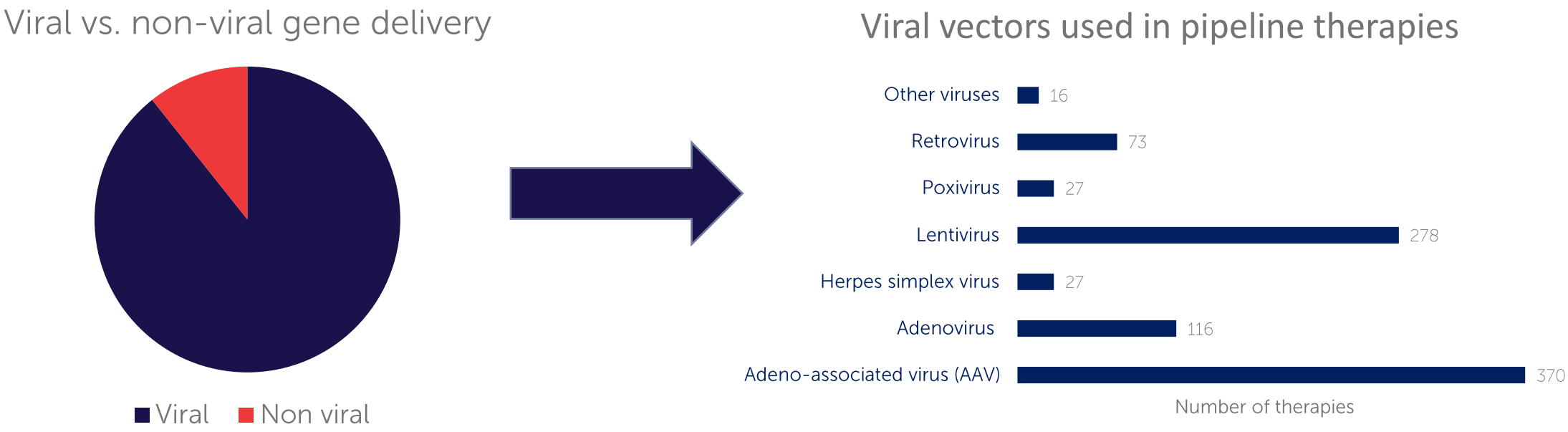
Gene therapy pipeline: Most commonly used vectors

- 88% of gene therapies in development leverage viral vectors for delivery
- Adeno-associated virus (AAV) and lentivirus are the most common viral vectors used in development



Source: Cell and Gene Therapy dashboard | Informa, April 2021

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Non-genetically modified cell therapy pipeline

Q1 2021

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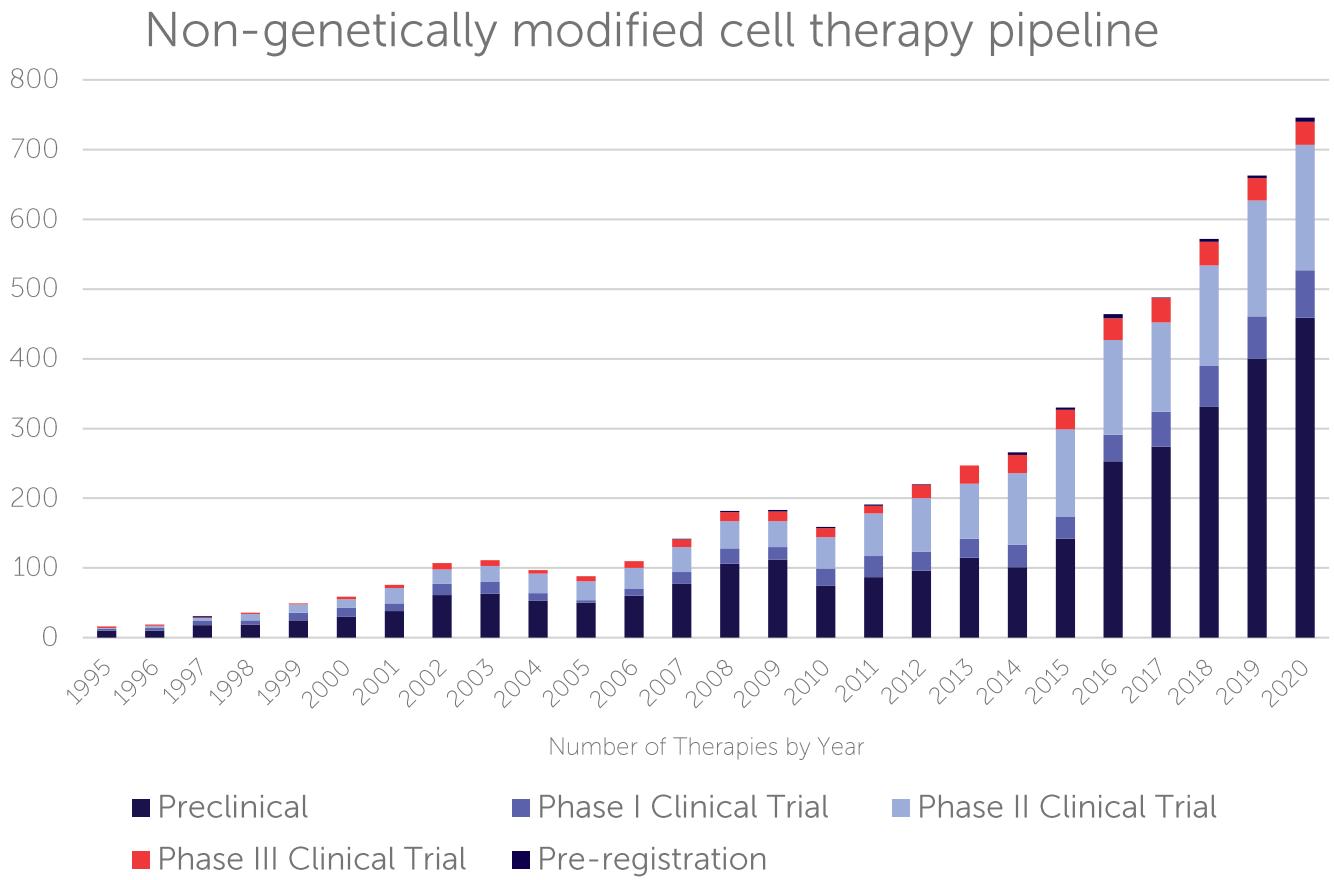
Non-genetically modified cell therapy pipeline

- The cell therapy pipeline has grown rapidly since 2015
- More than 700 cell therapies were in development in 2020 (preclinical through preregistration):
  - 61% of candidates are in preclinical development
  - There were 33 products in Phase III clinical studies



Source: Pharmaprojects | Informa, April 2021

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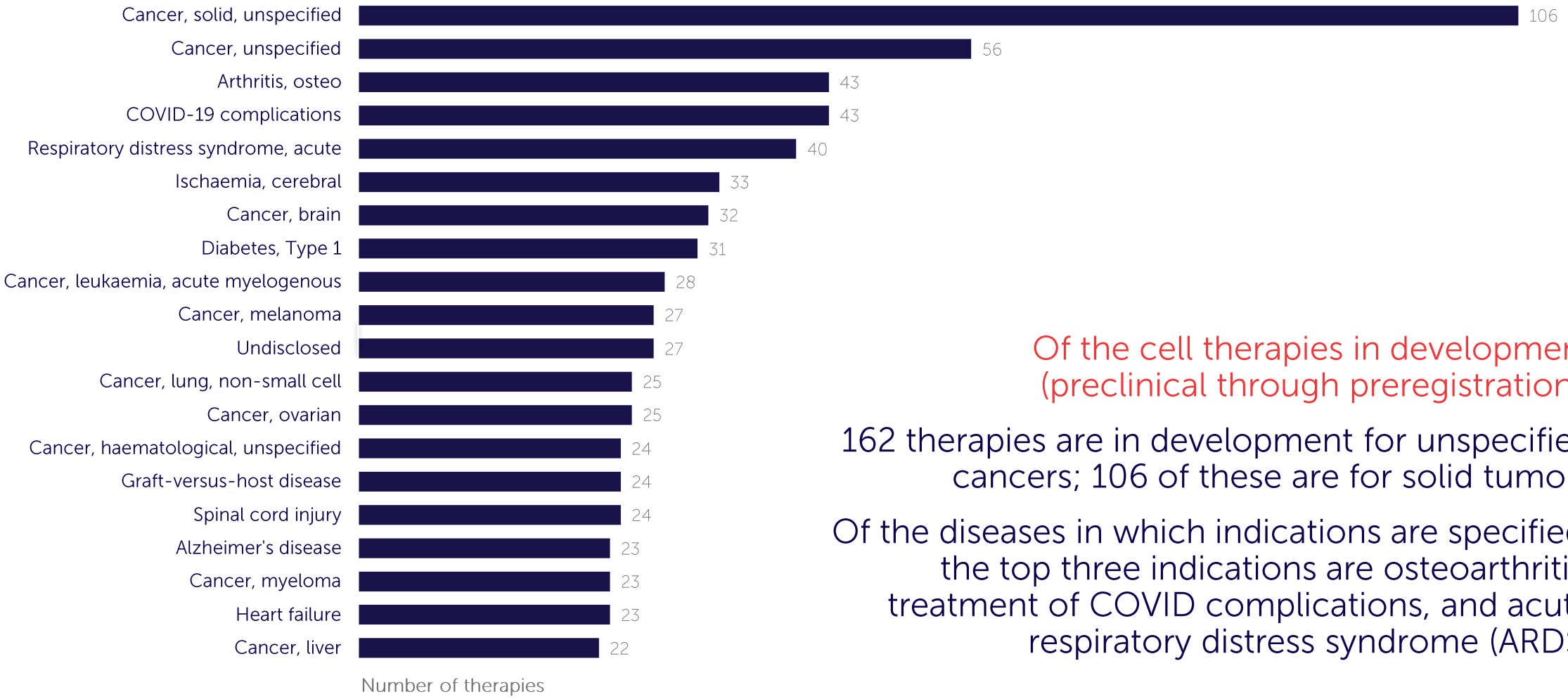
Non-genetically modified cell therapy pipeline: Most common disease targeted



Of the cell therapies in development (preclinical through preregistration):

162 therapies are in development for unspecified cancers; 106 of these are for solid tumors

Of the diseases in which indications are specified, the top three indications are osteoarthritis, treatment of COVID complications, and acute respiratory distress syndrome (ARDS)

Source: Pharmaprojects| Informa, April 2021

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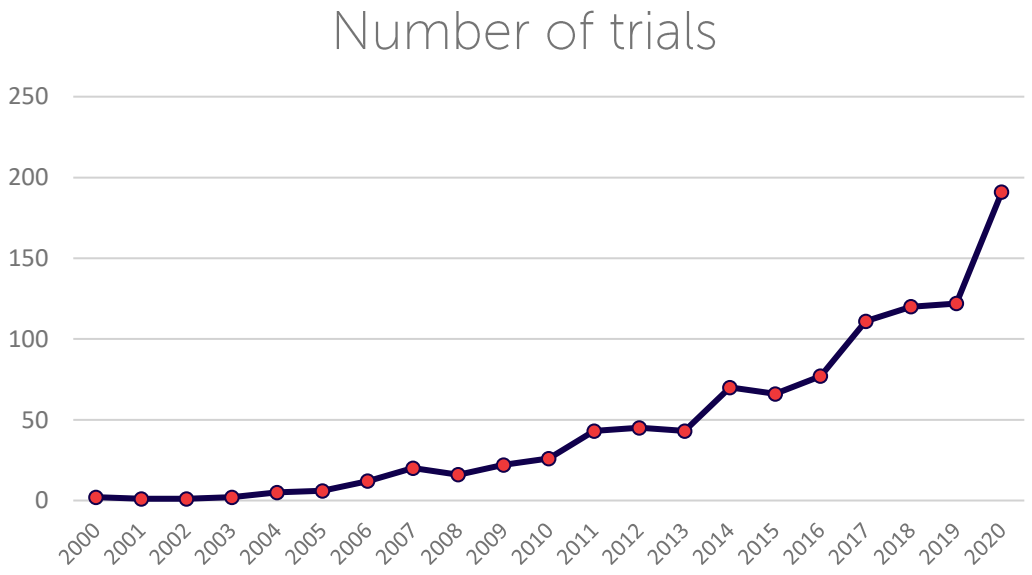
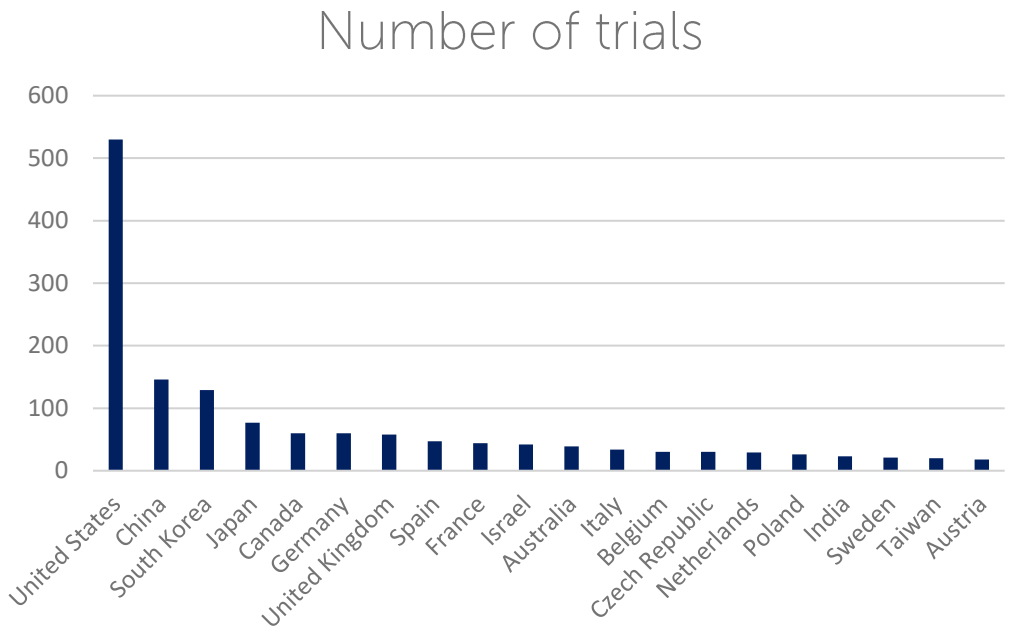
Non-genetically modified cell therapy trial activity

- There has been an exponential increase in cell therapy clinical trials since 2013
- Trials are predominantly run in the United States, with China, South Korea, and Japan following with far fewer trials





Source: Trialtrove| Informa, April 2021

American Society of Gene + Cell Therapy

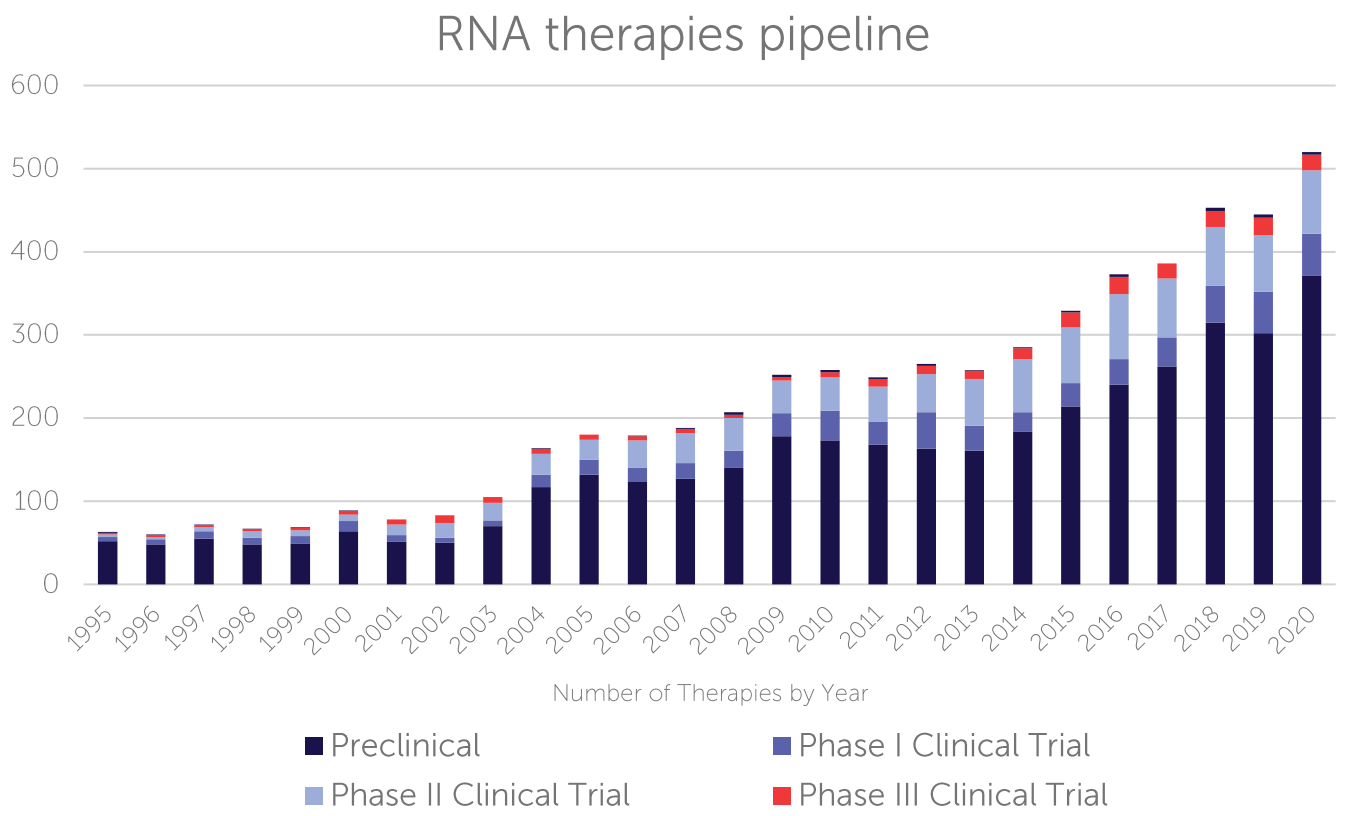
RNA therapy pipeline

Q1 2021

American Society of Gene + Cell Therapy

RNA therapies pipeline

- Steady increase in RNA pipeline activity since 2004
- In 2020:
  - More than 500 therapies were in development (from preclinical to preregistration stage), with 71% of therapies in preclinical development
  - 19 therapies were in Phase III clinical studies



Source: Pharmaprojects| Informa, April 2021

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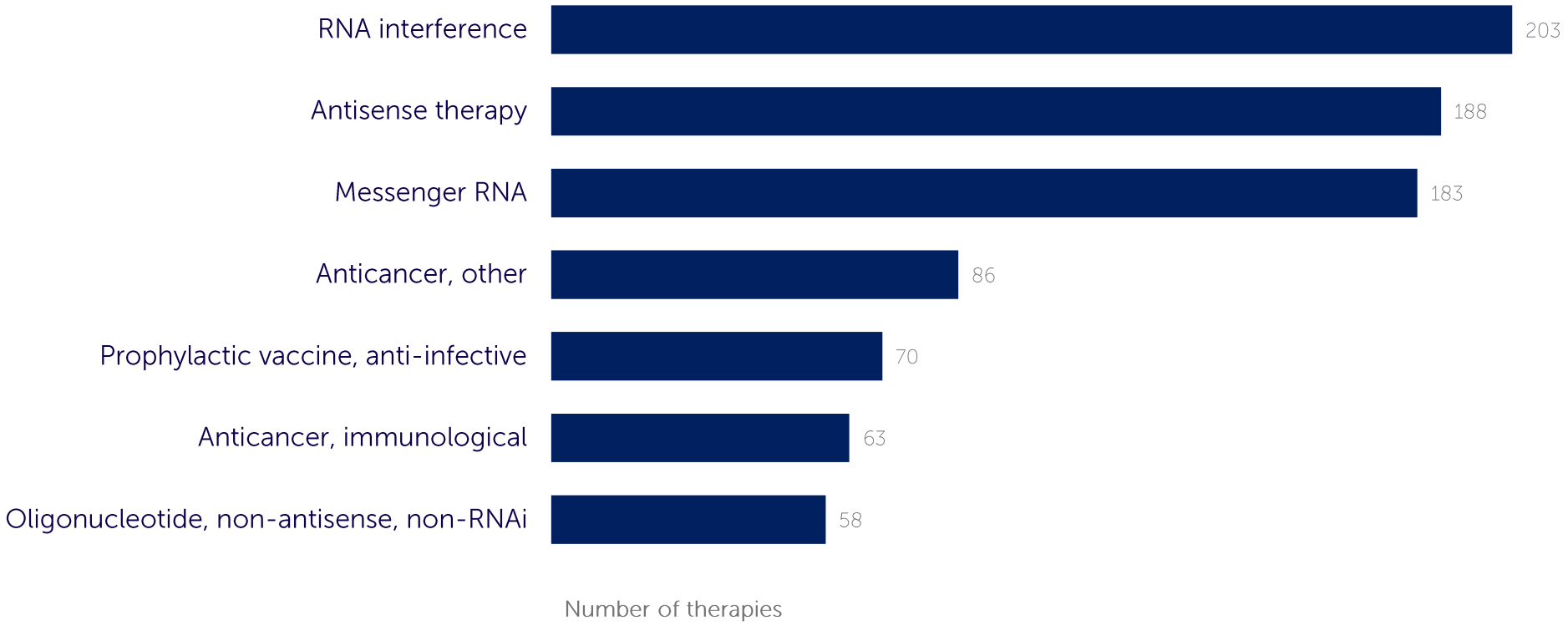
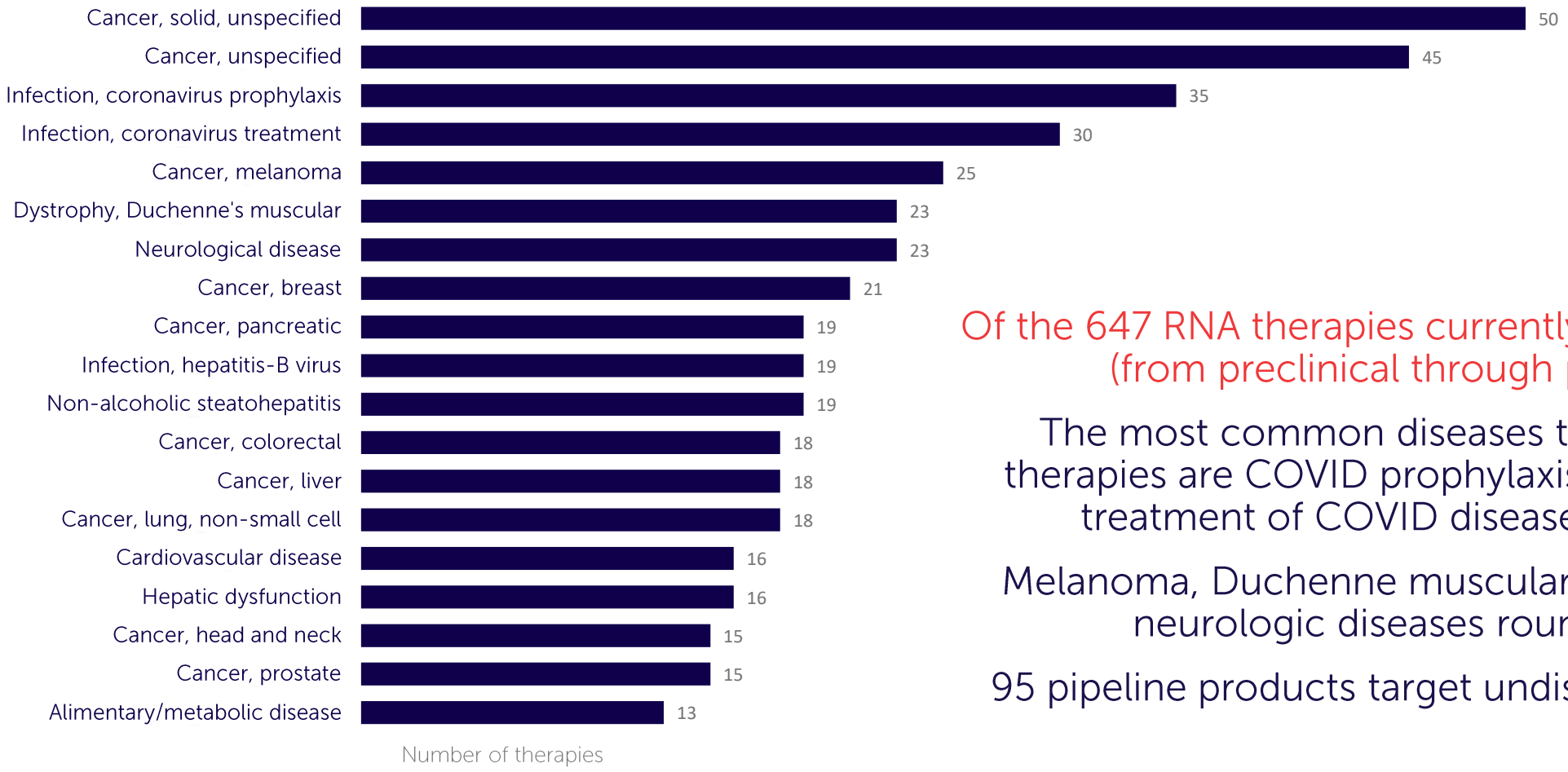
RNA therapy pipeline: Most common modalities

- The most common modalities in development (preclinical through preregistration) are RNA interference (RNAi), antisense oligonucleotides, and messenger RNA (mRNA)



Source: Pharmaprojects| Informa, April 2021

RNA therapies: Most common diseases targeted



Of the 647 RNA therapies currently in the pipeline (from preclinical through preregistration):

The most common diseases targeted by RNA therapies are COVID prophylaxis (vaccines) and treatment of COVID disease/complications

Melanoma, Duchenne muscular dystrophy, and neurologic diseases round out the top 5

95 pipeline products target undisclosed cancers

Source: Pharmaprojects | Informa, April 2021

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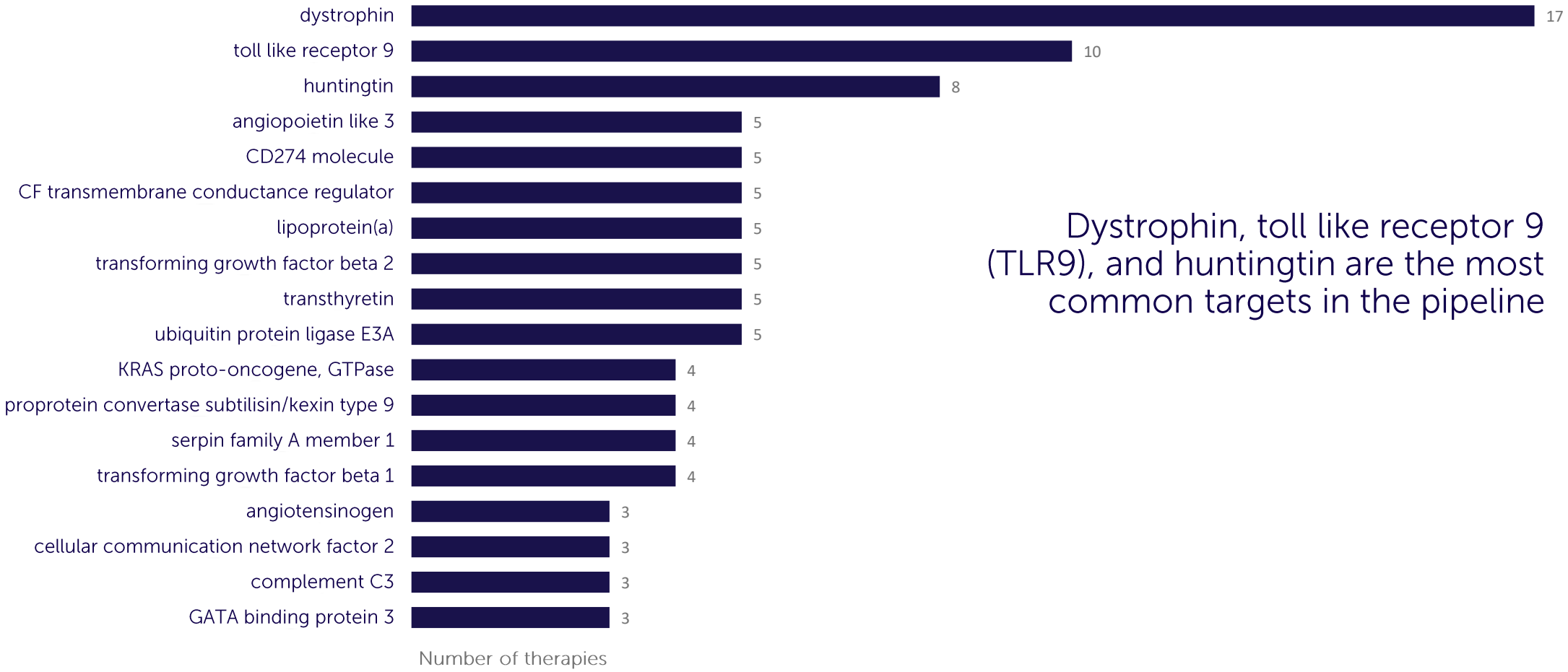
RNA therapy pipeline: Most common targets

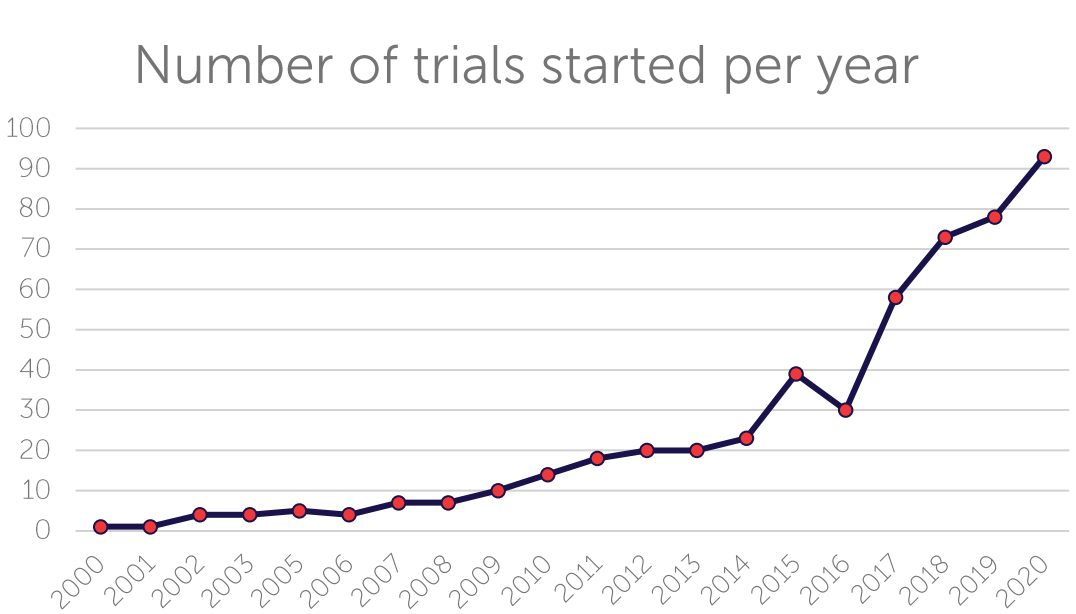


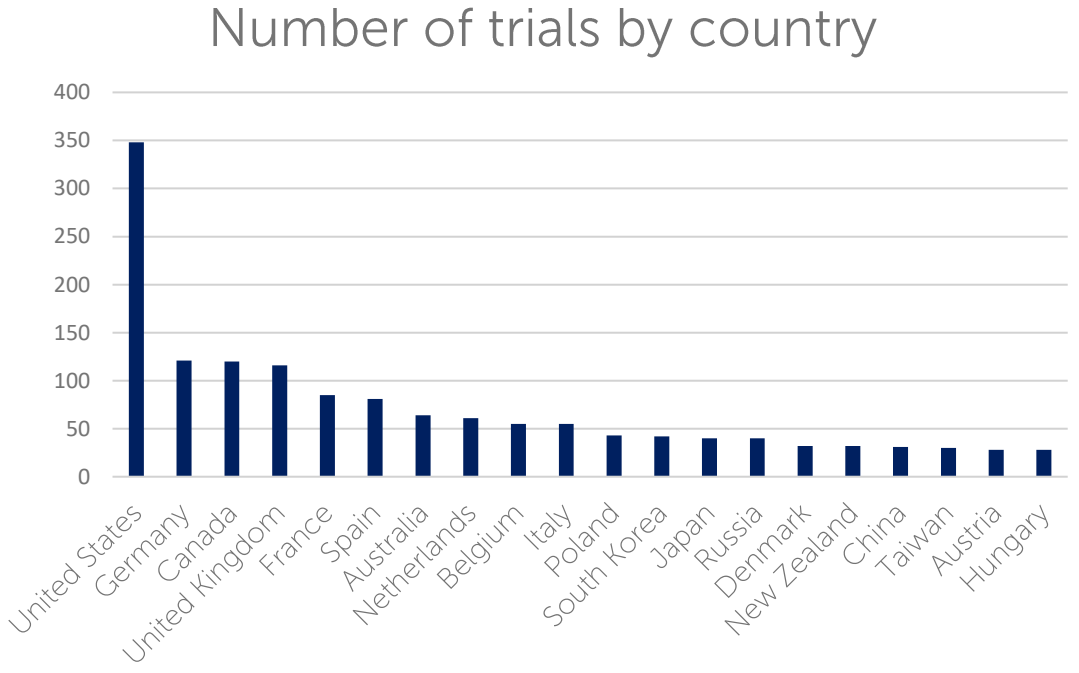
Dystrophin, toll like receptor 9 (TLR9), and huntingtin are the most common targets in the pipeline

Source: Pharmaprojects | Informa, April 2021

RNA therapy pipeline: Clinical trial activity

- There has been a dramatic increase in the number of RNA clinical trials started since 2016
- RNA trial activity is predominantly in the United States, followed by Germany, Canada, UK, and France





Source: Trialtrove| Informa, April 2021

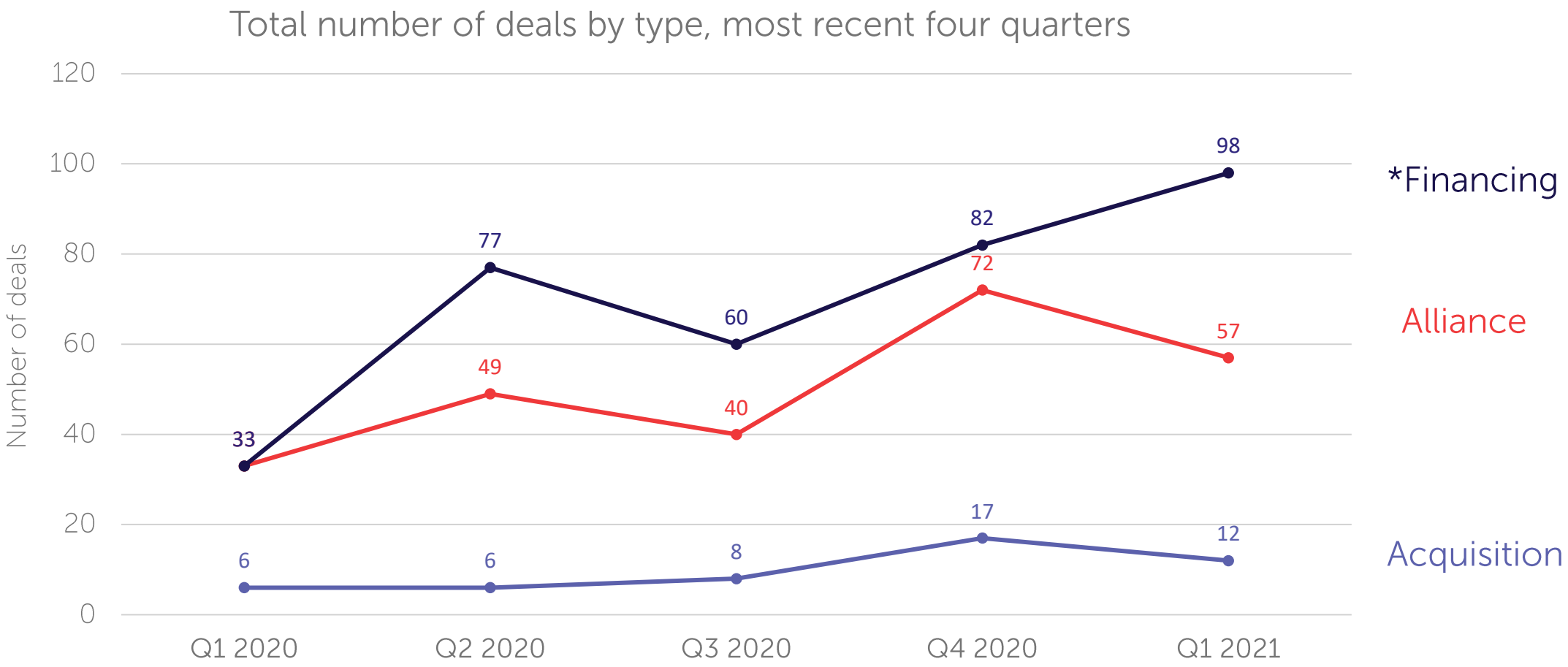
American Society of Gene + Cell Therapy

Overview of dealmaking for gene, cell, and RNA therapy companies

Q1 2021

American Society of Gene + Cell Therapy

Alliance, acquisition, and financing in gene, cell, & RNA therapy



Source: Biomedtracker | Informa, April 2021

*Financings include public financings (IPOs and follow-ons) plus privately raised funding through venture rounds, debt offerings, or private investment in public equity

American Society of Gene + Cell Therapy

Q1 2021 acquisitions in gene, cell, & RNA therapy

Deal Date	Deal Title	Potential Deal Value (USD)
01/08/2021	Celularity Reverse Merges with Public Shell GX Acquisition Corp. to Gain Nasdaq Listing	1,298,000,000
01/11/2021	Bluebird bio to Separate Oncology Business into Independent Company	Undisclosed
01/20/2021	Turnstone Biologics Acquires Myst Therapeutics	Undisclosed
02/03/2021	Coya Therapeutics Completes Merger with Nicoya Health	Undisclosed
02/16/2021	Nine Biotechs Merge into Newly Formed Centessa Pharmaceuticals	Undisclosed
02/17/2021	Charles River to Acquire CDMO Cognate for $875M	875,000,000
02/23/2021	Beam Therapeutics Acquires Guide Therapeutics	440,000,000
03/02/2021	WuXi AppTec Completes Acquisition of OXGENE	Undisclosed
03/02/2021	AgeX Therapeutics And LyGenesis To Negotiate Merger Agreement	Undisclosed
03/09/2021	Takeda Exercises Option to Acquire Maverick Therapeutics	525,000,000
03/30/2021	Amgen to Acquire Rodeo Therapeutics Corporation	721,000,000
03/23/2021	Renovacor to Reverse Merge with Public SPAC to Gain NYSE Listing	65,000,000

Source: Biomedtracker | Informa, April 2021

Start-up funding for gene, cell, & RNA therapy companies

Q1 2021

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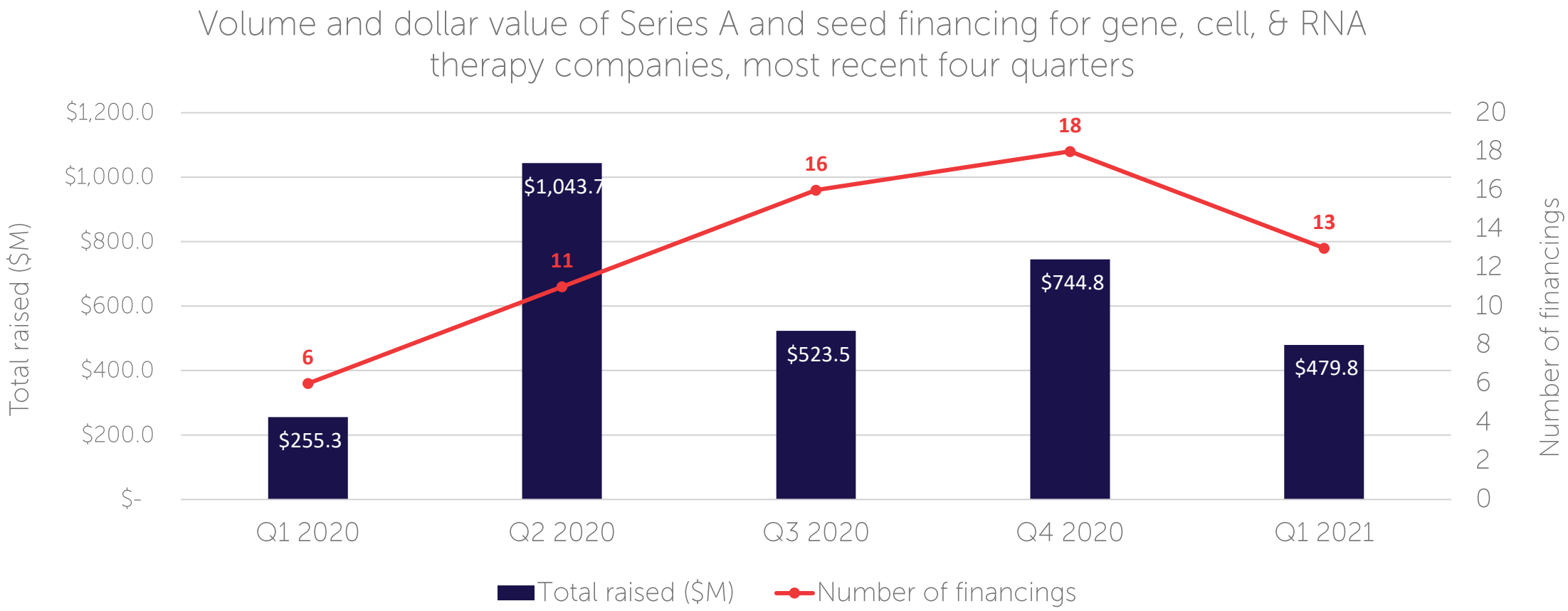
Start-up financing for gene, cell, & RNA therapy companies



Source: Biomedtracker | Informa, April 2021

American Society of Gene + Cell Therapy

Q1 2021 start-up financing for gene, cell, & RNA therapy companies

Deal Date	Deal Title	Company Location	Academic Source	Potential Deal Value (USD)
01/06/2021	Exacis Secures Undisclosed Seed Financing Round	United States, Massachusetts, Cambridge	n/a: Factor Biosciences spin off	Undisclosed
01/07/2021	LEXEO Therapeutics Launches with $85M Series A	United States, New York, New York City	Weill Cornell Medicine	85,000,000
01/08/2021	MANA Therapeutics Launches with $35M Series A Financing	United States, Virginia, Arlington	Children's National Hospital, Johns Hopkins Medical Center	35,000,000
01/11/2021	Atalanta Therapeutics Launches with Series A Financing	United States, Massachusetts, Boston	University of Massachusetts Medical School	Undisclosed
02/01/2021	AffyXell Raises $7.3M in Series A Financing	Korea (South)	n/a: Joint venture between Avacta Group and Daewoong Pharmaceutical	7,300,000
02/03/2021	Coya Therapeutics Announces $10M Series A Financing	United States, Texas, Houston	Houston Methodist Neurological Institute	10,000,000
02/10/2021	Notch Therapeutics Closes $85M Series A Financing to Develop Pipeline of Renewable Stem Cell-Derived Cancer Immunotherapies	Canada, Ontario, Toronto	Sunnybrook Research Institute and University of Toronto	85,000,000
02/11/2021	Ensoma Launches With a $70M Series A Financing	United States, Massachusetts, Boston	Fred Hutchinson Cancer Research Center and University of Washington School of Medicine	70,000,000
02/24/2021	Orna Therapeutics Launches with $80M Series A to Develop Circular RNA Therapies	United States, Massachusetts, Cambridge	Massachusetts Institute of Technology	80,000,000
03/01/2021	SalioGen Therapeutics Announces Closing of $20M Series A Financing	United States, Massachusetts, Burlington	n/a	20,000,000
03/01/2021	EG 427 Closes $14.5M Series A Financing	France, Paris	SATT Paris-Saclay	14,453,760
03/29/2021	Qihan Biotech Raises Additional $67M in Series A++ Financing	China, Zhejiang	n/a: affiliated with eGenesis; Harvard University co-founder	67,000,000
03/18/2021	Curi Bio Raises $6M Series A Financing	United States, Washington, Seattle	University of Washington (sponsored research agreement)	6,000,000

Source: Biomedtracker | Informa, April 2021

Notable Q1 2021 start-up gene, cell, & RNA therapy companies

	Company details	Academic source	Financing type/amount raised	Lead investor(s)	Therapy areas of interest
ORNA	Engineered circular RNA therapies that address challenges with expression, delivery, and manufacturing of linear mRNA therapies	Massachusetts Institute of Technology	Series A/$80M	MPM Capital, Taiho Ventures, F2 Ventures	Oncology and autoimmune diseases, including genetic disorders
SalioGen Therapeutics	Exact DNA Integration Technology: Non-viral gene therapies using a mammalian-derived enzyme	n/a	Series A/$20M	PBM Capital	Cardiovascular (familial hypercholesterolemia) and ophthalmic (inherited macular degeneration)
ensoma	*In vivo* delivery of genomic modification technologies via Engenious vectors to multiple cell types; does not require stem cell collection or myeloablative conditioning	Fred Hutchinson Cancer Research Center and University of Washington School of Medicine	Series A/$70M	5AM Ventures	Rare diseases, plus broadly oncology, autoimmune diseases, and infectious diseases

Source: Biomedtracker | Informa, April 2021; company websites

Appendix

Methodology, sources, & glossary of key terms

Q1 2021

American Society of Gene + Cell Therapy

Methodology: Sources and scope of therapies

Sources for all data come from Informa Pharma Intelligence

Pipeline and trial data

- Data derived from **Citeline (Pharmaprojects and Trialtrove)**
- Therapeutic classes included in report categorizations:
  - Gene therapies: Gene therapy; cellular therapy, chimeric antigen receptor; cellular therapy, T-cell receptor; lytic virus
  - Cell therapies: Cellular therapy, other; cellular therapy, stem cell; cellular therapy, tumor-infiltrating lymphocyte
  - RNA therapies: Messenger RNA; oligonucleotide, non-antisense, non-RNAi; RNA interference; antisense therapy

Deal and financing data

- Data derived from **Biomedtracker**
- The following industry categorizations of deals are included: Gene therapy, cell therapy; antisense, oligonucleotides

Glossary of key terms

Therapy type definitions

Gene therapy is the introduction, removal or change in genetic material—specifically DNA or RNA—into the cells of a patient to treat a specific disease. For the purpose of this report, the following terms shall mean the following: :

Gene therapy	Therapies containing an active ingredient synthesized following vector-mediated introduction of a genetic sequence into target cells *in-* or *ex-vivo*. Used to replace defective or missing genes (as in cystic fibrosis) as well as to introduce broadly acting genetic sequences for the treatment of multifactorial diseases (e.g., cancer). Direct administration of oligonucleotides without using vectors is covered separately in the antisense therapy class; RNA interference class; or oligonucleotide, non-antisense, non-RNAi class. Platform technologies for gene delivery are covered separately in the gene delivery vector class.
Cellular therapy, chimeric antigen receptor **Falls under gene therapy in this report*	Cellular therapy consisting of T cells that have been modified to express a chimeric antigen receptor (CAR) – this is a cell surface receptor that gives the T cells the ability to target a specific protein and fight the targeted cells.
Cellular therapy, T-cell receptor **Falls under gene therapy in this report*	Cellular therapies whereby natural T cells collected from the patient, are engineered to express artificial receptors (usually through viral transfections) that would target specific intracellular antigens (as peptides bound to proteins encoded by the major histocompatibility complex, MHC).
Lytic virus **Falls under gene therapy in this report*	Therapies which have a replication-competent virus, that lyse pathogenic cells directly. These are normally genetically modified to render them harmless to normal tissues. Examples include oncolytic viruses which specifically attack cancer cells.

Glossary of key terms

Therapy type definitions, cont.

Cell therapy includes the following therapeutic classes:

Cellular therapy, stem cell	Regenerative therapy which promotes the repair response of injured tissue using stem cells (cells from which all other specialized cells would originate).
Cellular therapy, tumor-infiltrating lymphocyte	Adoptive cellular transfer of tumor-resident T cells from tumor material, their expansion *ex vivo,* and transfer back into the same patient after a lymphodepleting preparative regimen.
Cellular therapy, other	Cellular therapies that do not fall under the categories of cellular therapy, stem cell; cellular therapy, CAR; cellular therapy, TIL; cellular therapy, TCR; or the specific cellular therapy is unspecified.

Glossary of key terms

Therapy type definitions, cont.

RNA therapy includes the following therapeutic classes:

Messenger RNA	Therapies that carry the desired mRNA code to overcome genetic mutations. The mRNA sequence will replace the defective mRNA in a patient and starts producing the desired protein.
Oligonucleotide, non-antisense, non-RNAi	Synthetic therapeutic oligonucleotides which operate by a mechanism other than antisense or RNA interference (RNAi). This includes ribozymes, aptamers, decoys, CpGs, and mismatched and immunostimulant oligonucleotides. Sequences delivered using vectors (gene therapy) are covered separately in "gene therapy." Antisense and RNAi oligonucleotides are covered separately in "antisense therapy" and "RNA interference," respectively.
RNA interference	Includes products which act therapeutically via an RNA interference (RNAi) mechanism, including small interfering RNAs (siRNAs). These may be synthetic oligonucleotides, or RNAi sequences may be expressed from a vector as a form of gene therapy (see "gene therapy" therapeutic class). *In vivo*, these sequences block the expression of a specific protein by forming an RNA-induced silencing complex, which then specifically binds to and degrades a complementary mRNA encoding the target protein. The use of RNAi purely as a drug discovery tool (e.g., in transgenic animal model production or in target validation) is not covered in this section.
Antisense therapy	Antisense compounds under development as potential therapeutics. These may be synthetic oligonucleotides, or antisense RNA may be expressed from a vector as a form of gene therapy. They may prevent the expression of a specific protein *in vivo* by binding to, and inhibiting the action of, mRNA, since they have a specific oligonucleotide sequence which is complementary to the DNA or RNA sequence which codes for the protein.

Glossary of key terms

Development status definitions

Pipeline	Drugs that are in active development
Preclinical	Not yet tested in humans
Phase I	Early trials, usually in volunteers, safety, PK, PD
Phase II	First efficacy trials in small numbers of patients
Phase III	Large-scale trials for registrational data
Preregistration	Filing for approval made to regulatory authorities
Approved	Approval from relevant regulatory authorities for human use

Unspecified indications

Cancer, unspecified	Indications for which the specific tumor type is not specified
Cancer, hematological, unspecified	Indications for which the specific hematological cancer is not specified
Cancer, solid, unspecified	Indications for which the specific solid tumor is not specified

Deal type categories

Alliances	Co-marketing, co-promotion, disease management, joint venture, manufacturing or supply, marketing-licensing, product or technology swap, product purchase, R+D and marketing-licensing, reverse licensing, trial collaborations
Financing	Convertible debt, FOPO, IPO, nonconvertible debt, financing/other, private investment in public equity, private placement, royalty sale, special-purpose financing vehicle, spin-off
Acquisitions	Buy-out, divestiture, spin-out, full acquisition, partial acquisition, reverse acquisition

American Society of Gene + Cell Therapy

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