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Biopharma | North America

INT Deep Dive Refresh following MRNA/MRK Ph3 melanoma data

MRNA/MRK reported positive topline data from a Ph3 trial of intismeran autogene (individualized neoantigen therapy or INT) in adjuvant melanoma. We review the technology (including AI angle), key debates, the forward catalyst path and market opportunity within.

PrivateCompany

We previously outlined individualized neoantigen therapies (INT) or cancer vaccines as one of three 'Moonshot' opportunities for Biopharma companies (see our work HERE). This first 'Moonshot' delivered with positive topline data from MRNA/MRK's Ph3 INTerpath-001 study of intismeran autogene (mRNA-based Individualized Neoantigen Therapy/INT) in adjuvant melanoma (see our notes HERE and HERE). BNTX/Roche (covered by Sarita Kapila) are also developing a mRNA-based, individualized Neoantigen Specific Immunotherapy (iNeST), autogene cevumeran, and previously presented single-arm Ph1 data in adjuvant pancreatic ductal adenocarcinoma (PDAC; see LINK and within). **We outline key debates below and have deep dive slides within.**

Four key debates:

- **First** - will this approach translate to other tumor types (hot vs. cold) and settings (adjuvant vs. metastatic). MRNA/MRK are pursuing 6 tumor types broadly (subtypes not included) vs. 2 by BNTX/Roche.

- **Second** - peak sales potential for INT (see slides 24-26). As a benchmark Keytruda peak sales are $37bn per our estimate, which is the most successful oncology drug in terms of sales.
- **Third** – will BNTX/Roche approach be competitive and result in a duopoly like COVID, or will this be a MRNA/MRK monopoly (see slide 9 for comparison).
- **Fourth** – how central of a role does AI play in these therapies (see slides 6-8), and is there broader read through for the Biopharma sector.

Four key catalysts ahead: (1) Full INT Ph3 adjuvant melanoma data at a medical conference in the Fall (we see ESMO Oct. 23-27 as a potential venue). The effect size (HR/p-value for RFS) remains a key outstanding question. For INT+Keytruda we believe 35-45% relative risk reduction vs. Keytruda is a benchmark for oncology studies that hit at an interim. (2) INT Ph2 RCC/kidney data in 2H26 or 2027. (3) INT Ph2 MIBC data in 2027. (4) BNTX/Roche cevumeran Ph2 colorectal cancer data in 2027. See Exhibit 1 .

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We offer detailed profiles of private companies in the space on slides 10-11 and 28-34.

Exhibit 1: Key catalysts for INT/iNeST

Company	Timing	Drug	Event
MRNA/MRK	2H26	intismeran autogene	Full Ph3 interim data in adj. melanoma (INTerpath-001) at a medical conf.
MRNA/MRK	2H26/2027	intismeran autogene	Ph2 potentially registrational interim data in adjuvant RCC
MRNA/MRK	2H26/2027	intismeran autogene	Potential BLA filing in melanoma
MRNA/MRK	2027	intismeran autogene	Ph2 adjuvant MIBC (INTerpath-005) data
BNTX/Roche	2027	autogene cevumeran	Ph2 adj. CRC DFS data
MRNA/MRK	2030	intismeran autogene	Ph3 +Keytruda adj. NSCLC (INTerpath-002) data

Source: Company Data, Morgan Stanley Research

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MRNA/MRK and BNTX/Roche Individualized Neoantigen-Specific Therapy (INT/iNeST)

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August 2026

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Overview

- **MRNA/MRK** and **BNTX/Roche** are independently developing their mRNA-based, individualized immunotherapies (formerly known as cancer vaccines).
    - MRNA/MRK's program is intismeran autogene/INT, which is being developed in 6 tumor types broadly (subtypes not included) vs. 2 by BNTX/Roche's autogene cevumeran (or iNeST).
- MRNA/MRK recently reported positive topline data from a Ph3 study that INT in combination with Keytruda as adjuvant therapy (i.e., post surgery) for **melanoma** demonstrated **statistically significant and clinically meaningful improvements** in efficacy (RFS and DMFS) compared to Keytruda alone.
- **First debate** - will this approach translate to other tumor types (hot vs. cold) and settings (adjuvant vs. metastatic). INT Ph2 data in RCC/kidney and MIBC/bladder are next proof points.
- **Second debate** - peak sales potential for INT (see slides 24-26). As a benchmark Keytruda peak sales are $37bn per our estimate, which is the most successful oncology drug in terms of sales.
- **Third debate** – will BNTX/Roche approach be competitive and result in a duopoly like COVID, or will this be a MRNA/MRK monopoly (see slide 9 for comparison).
- **Fourth debate** – how central of a role does AI play in these therapies (see slides 6-8), and is there broader read through for the Biopharma sector.
- **We offer detailed profiles of private companies in the space on slides 10-11 and 28-34.**

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How does an individualized neoantigen therapy (INT) work?

Cancer cells are very good at evading the immune system as they - look like healthy cells, turn off the immune response, hide from T cells, create an immuno-suppressive environment, and T cells may not fully penetrate tumors.

Neoantigens (i.e. "new antigens") arise from genetic mutations

- Antigen is something on a cell recognized by the immune system. Mutated protein-coding genes produce aberrant antigens, which can trigger immune response if presented to T cells
- Neoantigens only appear on cancer cells, making them a very specific marker of the cancer—these antigens are potentially immunogenic as they haven't been seen by the immune system before (i.e. non-self) and serve as a patient's "cancer fingerprint"

INT/iNeST therapies are designed based on the personalized neoantigen profile of a tumor

Anti-PD(L)1, such as Keytruda is likely needed to drive neoantigen-targeting T cells

- In an immuno-suppressive tumor environment, the neoantigen-targeting cytotoxic T cells are "exhausted" by numerous immuno-suppressive pathways
- Anti-PD(L)1 or other immune-checkpoint agents block these immuno-suppressive pathways, enabling the T cells to exert their cytotoxic/killer function on neoantigen-bearing cancer cells

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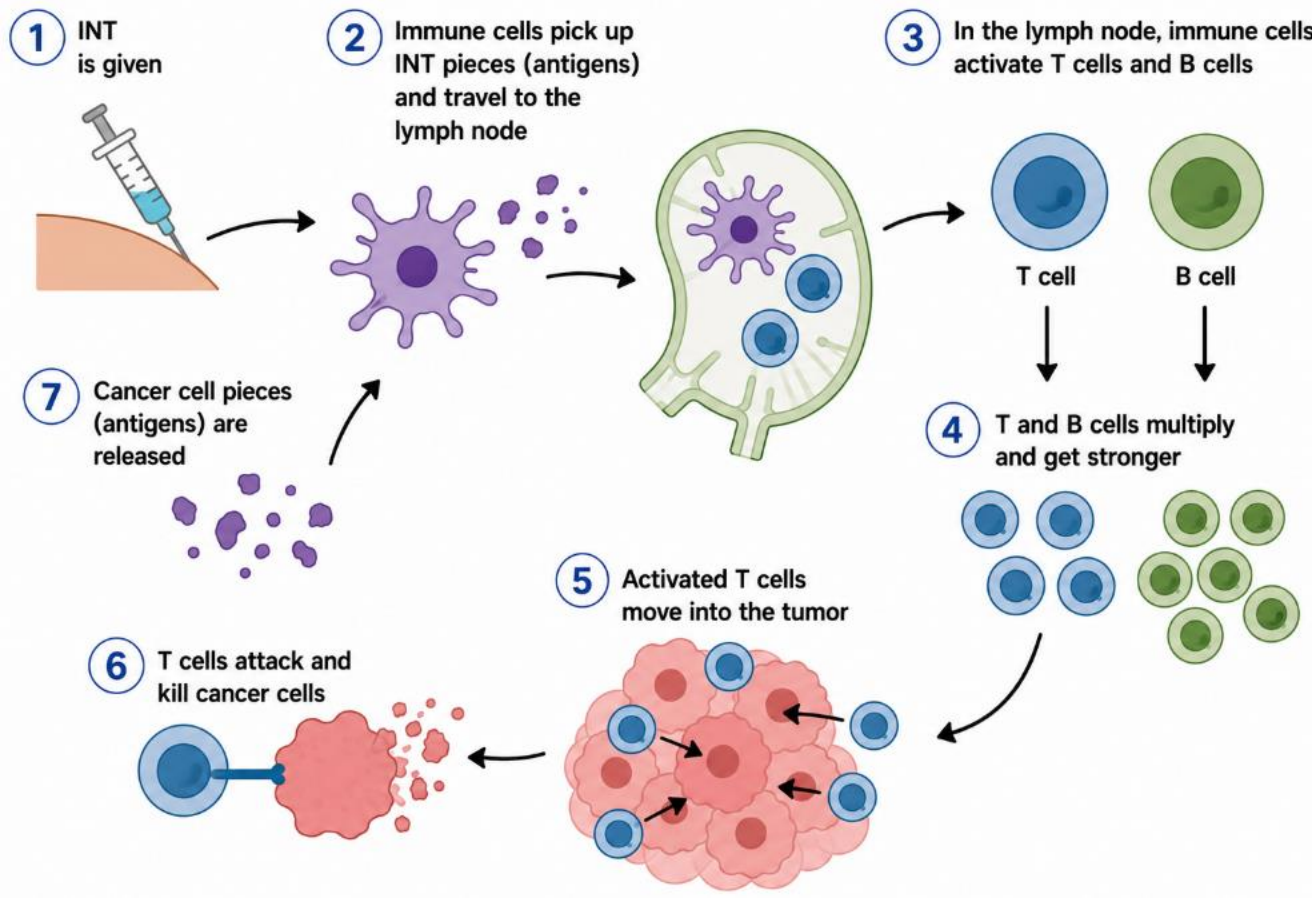
Overview of INT Mechanism of Action



Source: Adapted from Liu et al, Journal of Hematology & Oncology

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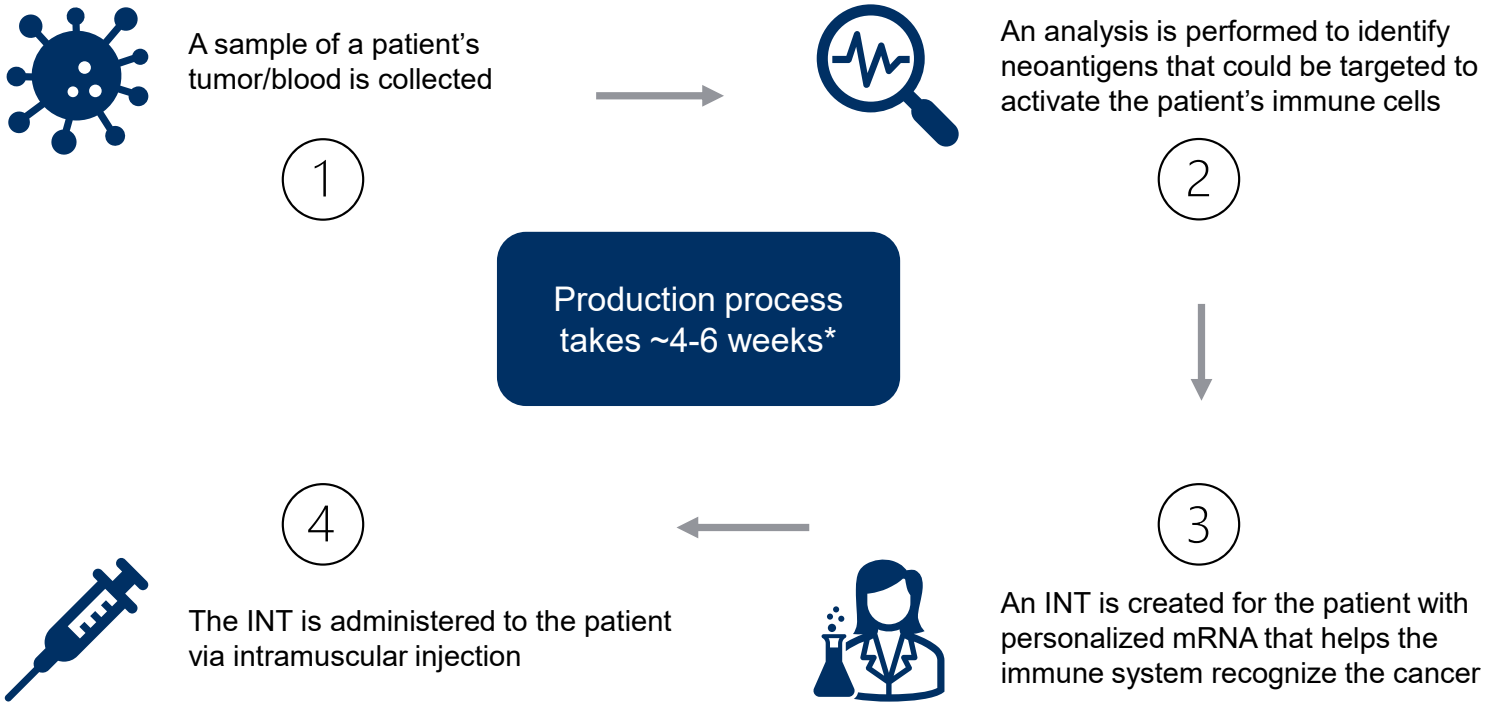
Overview of INT manufacturing process



Source: Adapted from Moderna/Merck; *per BNTX factsheet; "needle-to-needle" time is longer per MRNA, with a 60 day target

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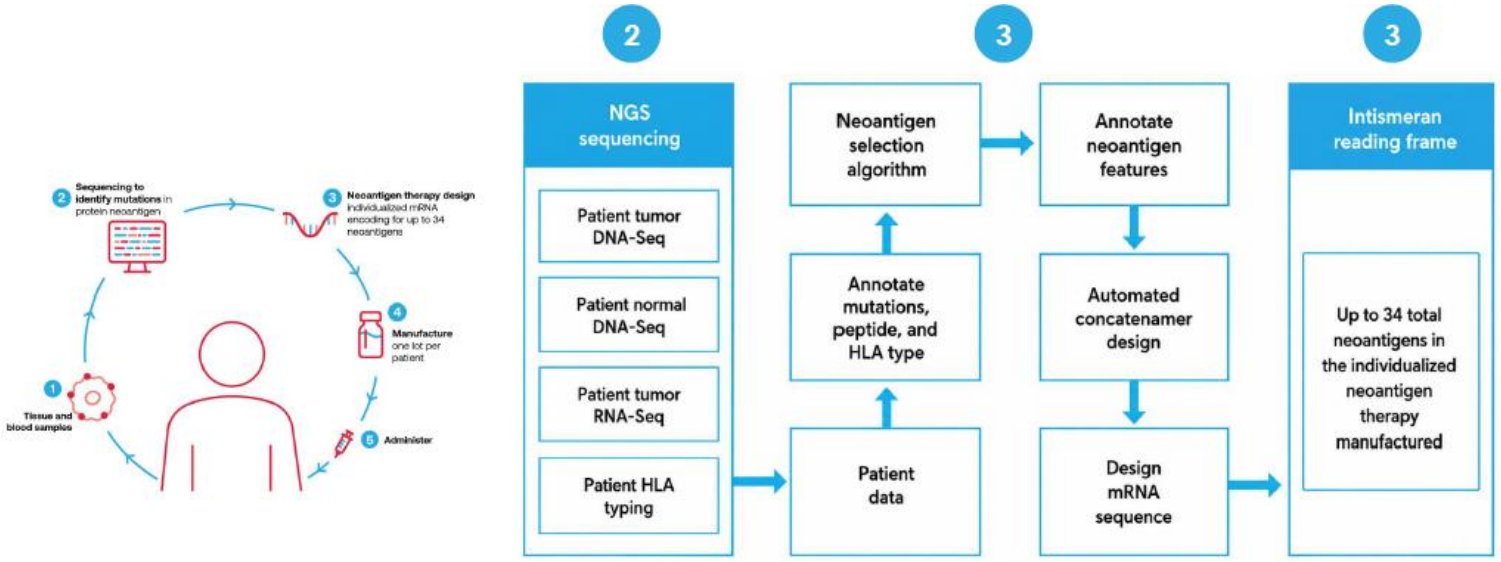
MRNA's neoantigen selection algorithm aided by AI/machine learning



A series of fully integrated AI algorithms takes next-generation sequencing (NGS) data from tumor and blood samples, reviews the genetic mutations, and predicts up to 34 of those neoantigens that are most likely to elicit an immune response.

In practice, ~29% of neoantigens that go into the cassettes are immunogenic per MRNA.

Source: MRNA Presentation

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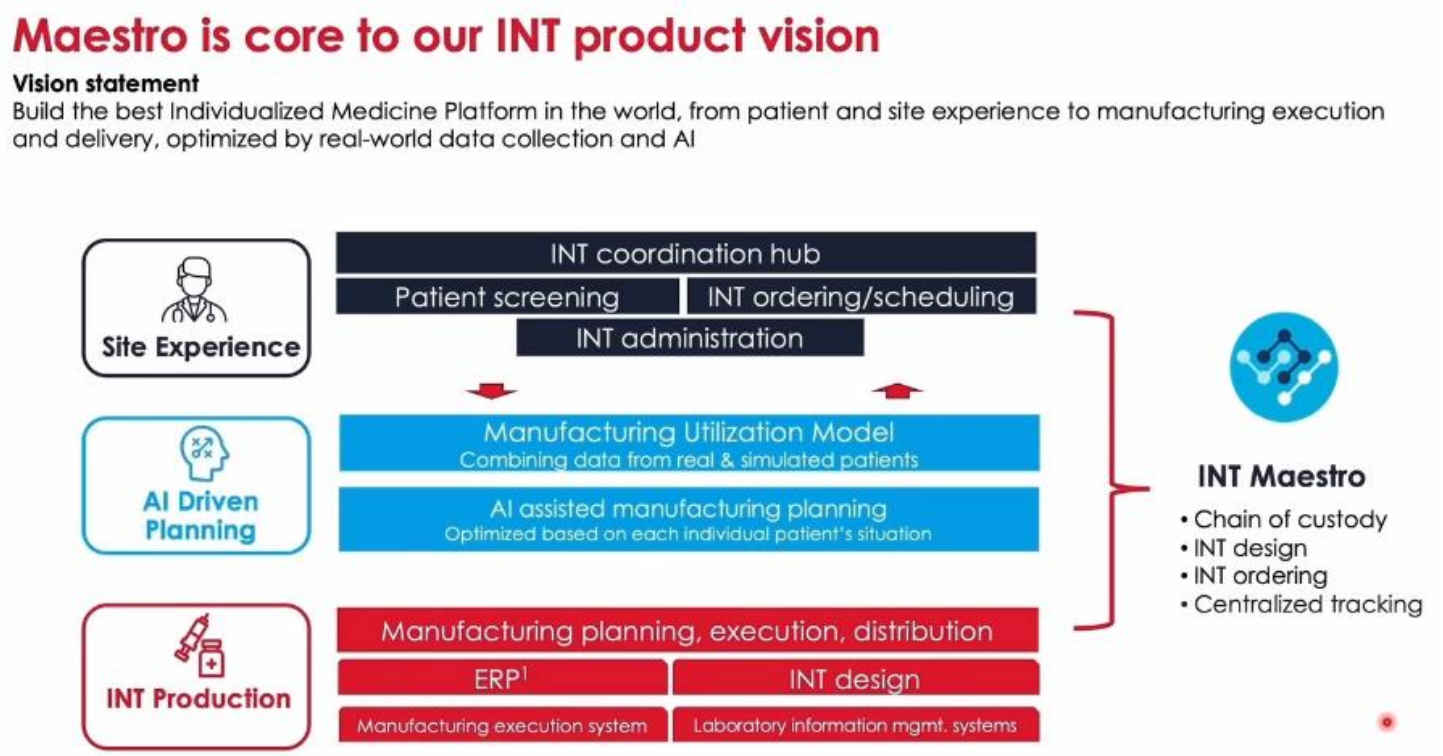
MRNA INT manufacturing also aided by AI



- MRNA built Maestro (enabled by AI) to help with INT scheduling and manufacturing.
- MRNA's Marlborough facility (GMP ready) has one line, which can service thousands of patients, and the facility can be scaled to include an additional line. Our INT sales estimates imply ~8k/52k patients receive therapy in 2030/2040.

Source: MRNA Presentation

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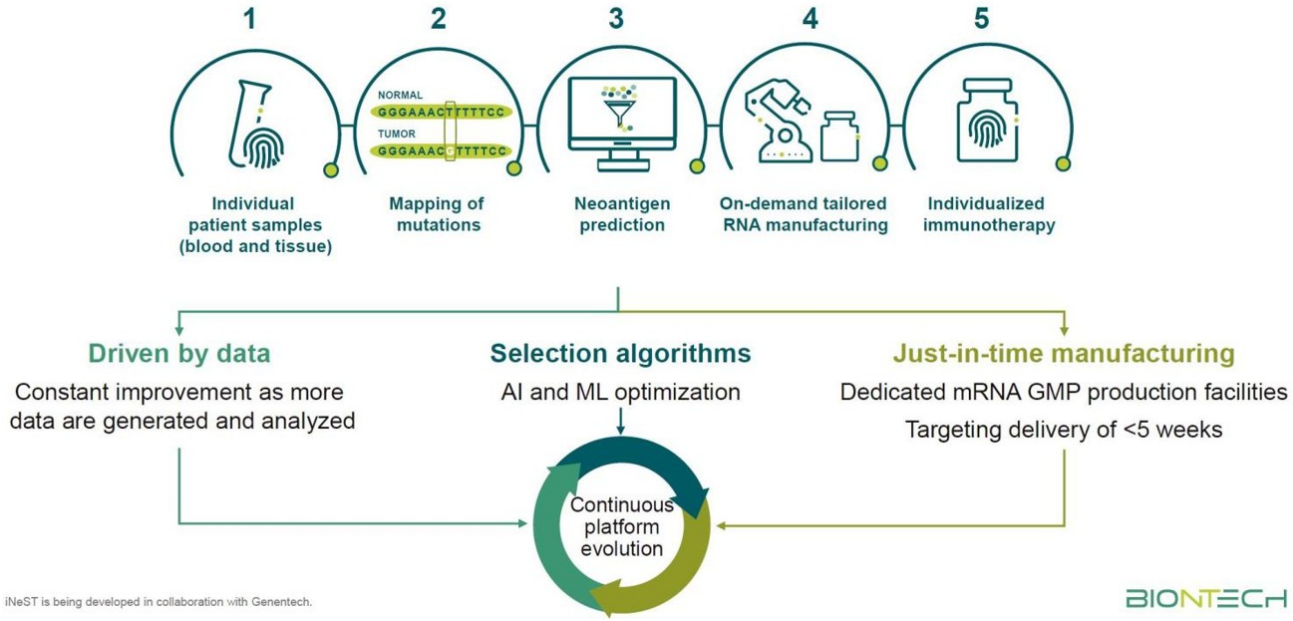
BNTX's neoantigen selection algorithm also aided by AI

- BNTX's neoantigen selection is also driven by AI, but chooses ~20 antigens
- Potential IP disputes between BNTX and MRNA could arise when INT (aka PCV) is commercialized. See our prior IP analysis note titled "PCV Comparative Patent Analysis" (pubd 3/29/2023).



Source: BNTX Presentation

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Competitive landscape

Several companies have ongoing early clinical work with similar approaches (mRNA, peptide, or DNA).

Company name	Public or private	Personalized approach or not	Lead tumor type under clinical development	Clinical stage
Abogen Biosciences	Private	**Both** — personalized ABO2109; off-the-shelf multi-KRAS ABO2102	Solid tumors / resected NSCLC for ABO2109; KRAS-mutant solid tumors for ABO2102	**Phase 1**
Evaxion	Public — Nasdaq: EVAX	**Personalized** — AI-selected neoantigen peptide vaccine (EVX-01)**; up to 10 neoantigens**	Metastatic melanoma	**Phase 2**
Everest	Public	**Both** — personalized EVM16 (**dozens of antigens**); off-the-shelf EVM14	Solid tumors	**Phase 1**
Geneos Therapeutics	Private	**Personalized** — neoantigen DNA vaccine (GNOS-PV02)**; ≤40 neoantigens**	Advanced hepatocellular carcinoma	**Phase 1/2**
Hangzhou Neoantigen Therapeutics	Private	**Personalized** — neoantigen mRNA (iNeo-Vac-R01)	Advanced digestive-system malignancies	**Phase 1**
Immorna	Private	**Off-the shelf** — neoantigen srRNA (JCXH-212)	NSCLC	**Phase 1**
Jiangsu Synthgene Biotech	Private	**Personalized** — neoantigen mRNA (SJ-Neo006)	Resectable pancreatic ductal adenocarcinoma	**Phase 1**

Source: Company data, CT.gov, Morgan Stanley Research; Evaxion is not covered; Everest is covered by Jack Lin.

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Competitive landscape (cont.)

Company name	Public or private	Personalized approach or not	Lead tumor type under clinical development	Clinical stage
NeoCura	Private	**Primarily personalized** neoantigen mRNA; also developing shared/public neoantigens	Gastric / esophageal / liver cancers; broader advanced solid tumors	**Phase 1**
Nykode Therapeutics	Public — Oslo Børs	**Both** — individualized VB10.NEO **(10-20 neoantigens)** and off-the-shelf vaccines such as VB10.16	HPV16+ cancers for off-the-shelf program; advanced solid tumors for VB10.NEO	**Phase 2** overall; **Phase 2 ready** for personalized VB10.NEO
Shanghai Regenelead Therapies	Private	**Personalized** — neoantigen mRNA	Resected pancreatic adenocarcinoma; also resected NSCLC	**Phase 1**
Shanghai Xinpu Biotechnology	Private	**Personalized** — mRNA (XP-004); **10-20 neoantigens**	Adjuvant pancreatic cancer	**Phase 1**
Transgene	Public — Euronext Paris: TNG	**Both** — individualized TG4050 **(≤30 neoantigens)** and shared-antigen TG4001	HPV-negative head & neck squamous cell carcinoma	**Phase 2**

Source: Company data, CT.gov, Morgan Stanley Research; Nykode and Transgene are not covered

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Off-the-shelf mRNA immunotherapies

- Off-the-shelf mRNA immunotherapies could be more suited for the metastatic setting.
- BNTX is developing a platform of “FixVac” assets, which are not personalized to the patient’s tumor sample.
- FixVac vaccines target a fixed set of shared tumor antigens commonly expressed across patients with a given cancer type, enabling “off-the-shelf” treatment.

BNT113	BNT116
1L	Multiple settings
HPV16+ PD-L1 CPS ≥1 HNSCC Phase 2/3	NSCLC Phase 1 & 2
+ Pembrolizumab	Mono & combo with IO & ADCs
• Recruitment ongoing • Trial updated to Phase 2/3	• Recruitment completed in Phase 2 in 1L NSCLC[2] • Data presented at **SITC 2023, AACR 2024, SITC 2024** and **AACR 2026** • Data in frail patients presented at **AACR 2025** • Data in patients after CRT presented at **WCLC 2025** • Data expected at **WCLC 2026**
Phase 3 interim analysis expected in 2026	

- BNTX plans to present interim Ph3 data for BNT113 in HPV+, PD-L1 CPS ≥ 1 HNSCC in 2H26.

Source: Company presentation

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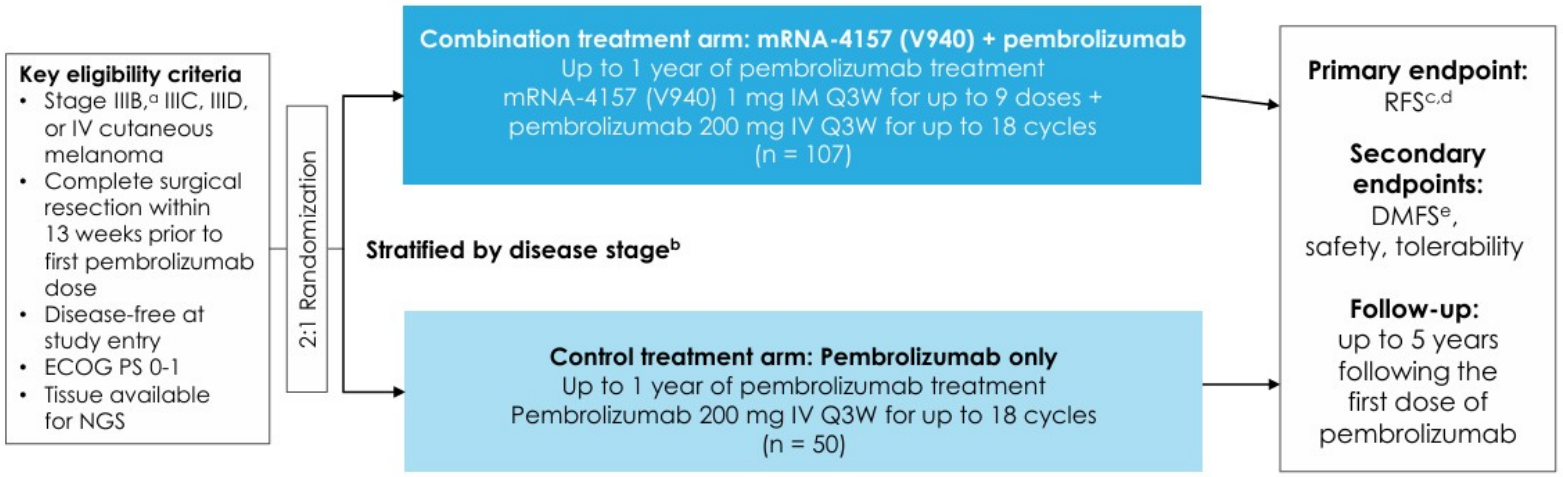
Data to date: MRNA/MRK

KEYNOTE-942: INT Ph2 adjuvant melanoma trial design

Randomized, Phase 2, open-label study in adjuvant resected melanoma patients at high risk of recurrence



Source: Company data

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Data to date: MRNA/MRK

Baseline characteristics from the INT Ph2 melanoma trial (KEYNOTE-942)

Characteristic, n (%)	mRNA-4157 (V940) + pembro (n = 107)	Pembro (n = 50)
Sex		
Male	70 (65.4)	31 (62.0)
Female	37 (34.6)	19 (38.0)
Age, years		
Mean (SD)	61.3 (13.50)	59.4 (14.25)
Range (median)	63 (26-83)	61.5 (24-89)
Age group		
<65 years	59 (55.1)	28 (56.0)
≥65 years	48 (44.9)	22 (44.0)
ECOG PS score[a]		
0	90 (84.1)	40 (80.0)
1	15 (14.0)	9 (18.0)
Stage[b]		
Stage IIIC	89 (83.2)	42 (84.0)
Stage IIID	2 (1.9)	2 (4.0)
Stage IV	16 (15.0)	6 (12.0)
LDH, U/L		
Median (range)	189.5 (118-528)	185.5 (113-1180)
>ULN	5 (4.7)	3 (6.0)
Lymph node dissection	34 (31.8)	15 (30.0)
PD-L1 status		
Positive	69 (64.5)	27 (54.0)
Negative	13 (12.1)	5 (10.0)
Indeterminant[c]	25 (23.4)	18 (36.0)
***BRAF*[d]**		
V600K or V600E mutation	41 (38.3)	20 (40.0)
WT[e]	66 (61.7)	30 (60.0)
Tumor mutational burden[f]		
<10 mutations/Mb	26 (24.3)	19 (38.0)
≥10 mutations/Mb	79 (73.8)	30 (60.0)

Source: Company data

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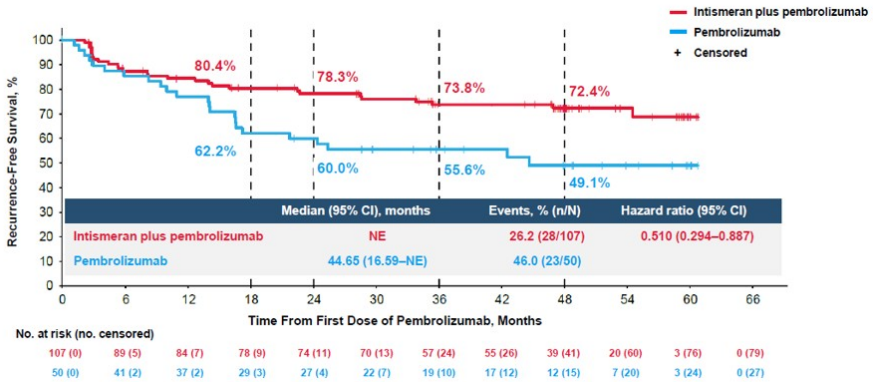
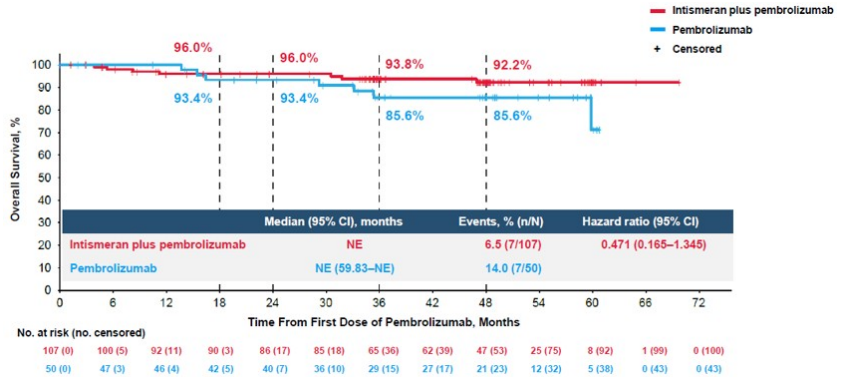
Data to date: MRNA/MRK

5-year follow-up data of INT Ph2 trial in adjuvant melanoma show a durable response

- INT + Keytruda showed sustained improvement on RFS primary endpoint vs. Keytruda monotherapy (HR=0.51).



- INT + Keytruda showed a positive OS trend vs. Keytruda monotherapy (HR=0.47).
- 4yr OS rate of 92% for the combo vs. 86% with Keytruda alone.



- **Results from BNT122 Ph1 pancreatic cancer trial similarly showed durability,** with a 90% survival rate for responders at 6 years (Balanchandran et al, AACR 2026).

Source: Company data, ASCO 2026

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Data to date: MRNA/MRK

KEYNOTE-942: Ph2 trial in adjuvant melanoma, 5yr follow-up (safety)

	Intismeran + Pembrolizumab (n=104)		Pembrolizumab (n=50)	
Event, n (%)	**Any grade**	**Grade ≥3**	**Any grade**	**Grade ≥3**
Any AE	104 (100)	35 (33.7)	47 (94.0)	15 (30.0)
Any treatment-related AE	104 (100)	26 (25.0)	42 (84.0)	7 (14.0)
Serious AE	14 (13.5)	13 (12.5)	5 (10.0)	4 (8.0)
Immune-mediated AEs[a]	38 (36.5)	11 (10.6)	19 (38.0)	6 (12.0)

Intismeran + pembrolizumab (n=104), n (%)	Grade 1	Grade 2	Grade 3	Grade 4/5	Total (n=104)
Patients with intismeran-related AE[b]	33 (31.7)	54 (51.9)	11 (10.6)	0	98 (94.2)
Fatigue	39 (37.5)	18 (17.3)	5 (4.8)	0	62 (59.6)
Injection site pain	37 (35.6)	25 (24.0)	0	0	62 (59.6)
Chills	49 (47.1)	4 (3.8)	0	0	53 (51.0)
Pyrexia	35 (33.7)	15 (14.4)	1 (1.0)	0	51 (49.0)
Injection site erythema	28 (26.9)	5 (4.8)	0	0	33 (31.7)
Headache	19 (18.3)	13 (12.5)	0	0	32 (30.8)
Influenza-like illness	21 (20.2)	10 (9.6)	0	0	31 (29.8)
Nausea	23 (22.1)	3 (2.9)	0	0	26 (25.0)
Myalgia	16 (15.4)	6 (5.8)	1 (1.0)	0	23 (22.1)

AE, adverse event; AEOSI, adverse event of special interest; CMQ, customized MedDRA queries.
Safety was analyzed in all randomized patients with ≥1 treatment dose. AEs were monitored throughout the study through 100 days after last intismeran dose and 30 days after last pembrolizumab dose (90 days for serious AEs). All patients completed study treatment before primary analysis (2022). Grading per NCI CTCAE v5.0. [a]Based on established list of pembrolizumab immune-related AEs (CMQ Pembrolizumab AEOSI); [b]Intismeran-related AEs included events attributed by investigators to intismeran alone and to both intismeran and pembrolizumab.

- Manageable safety profile vs. Keytruda monotherapy
- Immune-related AEs were similar across the two arms (occurred in 36.5% of patients receiving the combo vs. 38% receiving Keytruda alone)
- The most common AEs of any grade attributed to mRNA-4157 were fatigue (60%), injection site pain (60%), chills (51%), and pyrexia (49%), similar to those expected from other vaccinations

Source: Company data, ASCO 2026

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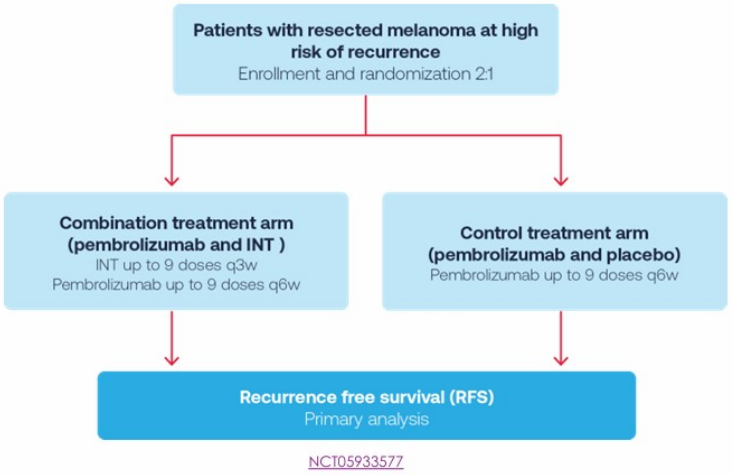
What's next: MRNA/MRK

INT Ph3 trial in adjuvant melanoma (INTerpath-001)



Randomized, double-blind placebo controlled, INT + pembrolizumab (KEYTRUDA®) vs. placebo + pembrolizumab (2:1) (INTerpath-001)

Resected melanoma patients: stage IIB or IIC, III, IV

Primary endpoint: recurrence free survival (RFS)

Secondary endpoints: Distant Metastasis-Free Survival (DMFS), Overall-Survival (OS)

Number of participants: ~1,089

- Ph3 same dosing for INT (Q3W for up to 9 doses) and Keytruda (up to 1 year) as Ph2 trial.
- Positive topline data reported 8/19/26; **full data expected at a medical conference in Fall '26.**
- **The effect size (HR/p-value for RFS) remains a key outstanding question.** For INT+Key we believe 35-45% relative risk reduction vs. Key is a benchmark for oncology studies that hit at an interim (vs. 44% in INT Ph2 from initial cut).
- **Expectations for control arm:** In KEYNOTE-054 (resected stage III melanoma) Keytruda demonstrated a 12-month RFS rate of 75% vs. 61% for placebo. At 5-year follow up, mRFS had not been reached for Keytruda.

Source: Company data, Eggermont et al, NEJM 2018, Eggermont et al, NEJM Evidence 2022, Keytruda HCP site

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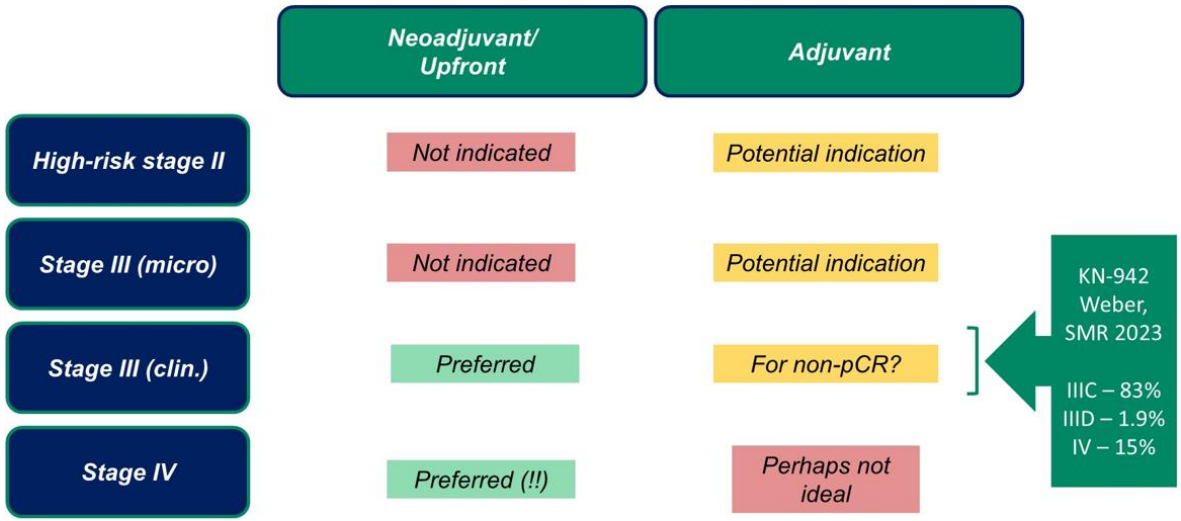
Where does INT fit in the neoadjuvant era for melanoma?

- Stage 2 melanoma extends beyond the epidermis (very outer layer of skin) into the thicker dermis layer of the skin. Stage 3 melanoma has spread to regional lymph nodes or nearby skin.
- At ASCO 2026, a discussant provided an overview on the evolving landscape of neoadjuvant (pre-surgery) vs. adjuvant (after surgery) treatment for different stages of melanoma. The preferred treatment for Stage III (clinically apparent or macrometastases) is neoadjuvant. The yellow boxes are indicated by the discussant as the stages that INT approach could be used.
- A multivariate analysis found 81% of Stage III patients had micrometastases (Balch 2010 in J. of Clin. Onc.).



Source: ASCO 2026 Presentation

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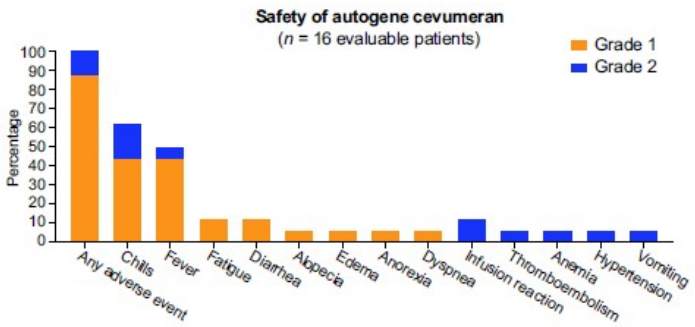
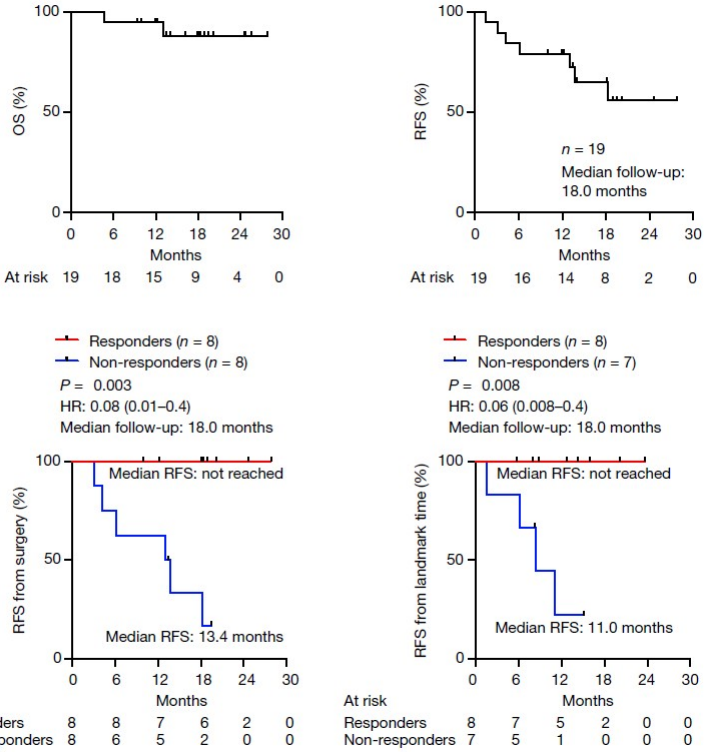
Data to date: BNTX/Roche

Autogene cevumeran Ph1 pancreatic ductal adenocarcinoma (PDAC) data

- 15 patients were treated with autogene cevumeran + Tecentriq (PDL1) + mFOLFIRINOX (chemo)
- Primary endpoint was safety; secondary endpoints were 18-mo RFS and OS (see right)
- Autogene cevumeran was tolerable and induced *de novo* high-magnitude neoantigen-specific T cells in 8/16 pts, with half targeting >1 vaccine neoantigen
- RFS was correlated to immune response (50% of treated patients were classified as responders)





Source: Rojas et al, Nature 2023

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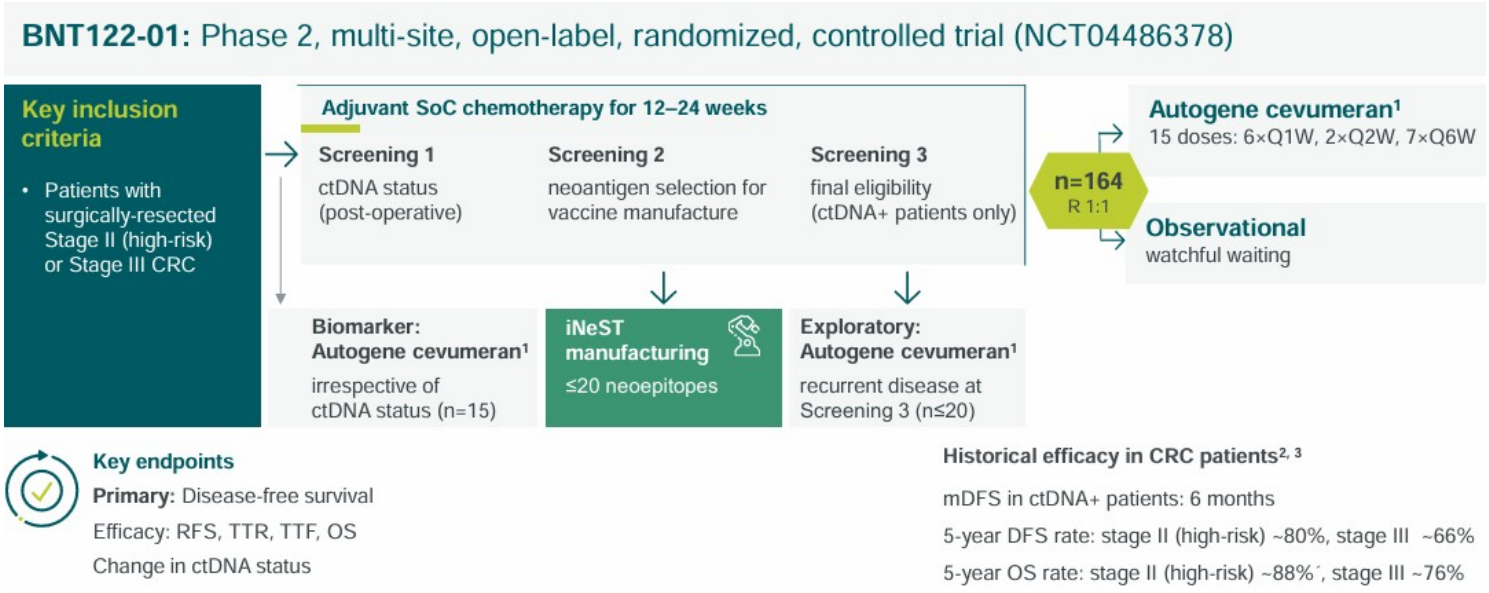
What's next: BNTX/Roche

Ph2 trial design for autogene cevumeran in adjuvant ctDNA+ CRC



- Primary endpoint of mDFS, where historical benchmark is ~6mos in ctDNA+ patients
- Interim analysis by DSMB concluded in June 2026, and the study continues without modification. **Final analysis expected in 2027.**

Source: BNTX Presentation

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What's next for INT/iNeST

Key Upcoming Catalysts

- MRNA/MRK reported positive topline data 8/19/26 from the Ph3 INTerpath-001 trial of INT in adjuvant melanoma. We anticipate presentation of the full data in Fall '26 (potentially ESMO conf Oct. 23-27).
- Ph2 data in other tumor types (including bladder, kidney, and colon cancer) expected in the next 12-18 mos (see below).

Timing	Drug	Event
2H26	intismeran autogene	Full Ph3 interim data in adj. melanoma (INTerpath-001) at a medical conf.
2H26/2027	intismeran autogene	Ph2 potentially registrational interim data in adjuvant RCC
2H26/2027	intismeran autogene	Potential BLA filing in melanoma
2027	intismeran autogene	Ph2 adjuvant MIBC (INTerpath-005) data
2027	autogene cevumeran	Ph2 adj. CRC DFS data
2030	intismeran autogene	Ph3 +Keytruda adj. NSCLC (INTerpath-002) data

Source: Company data, Morgan Stanley Research

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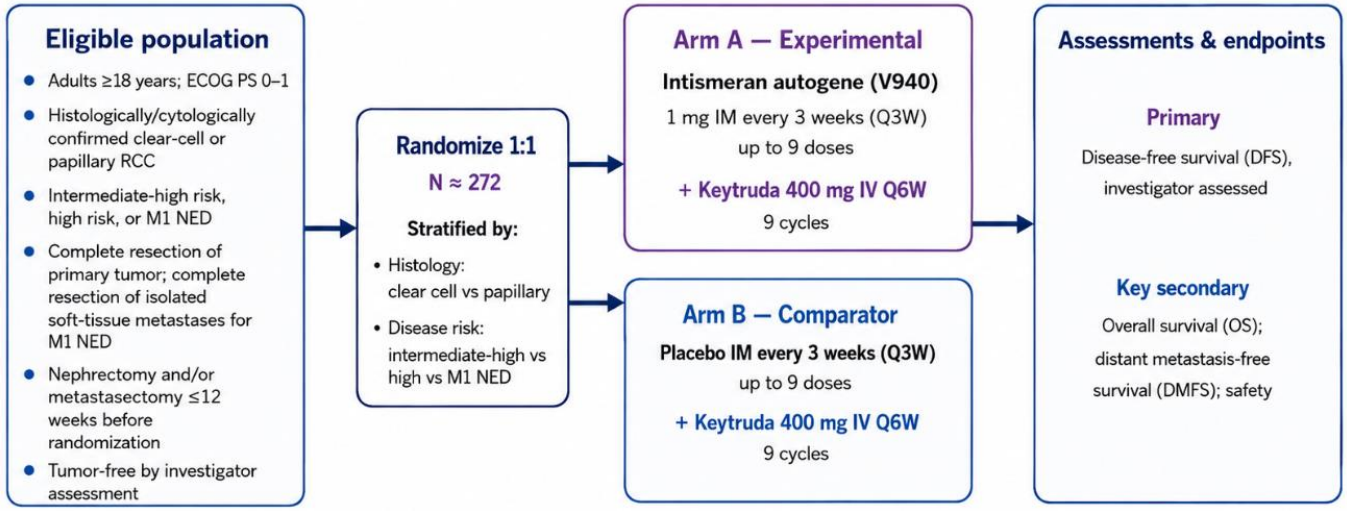
Adjuvant RCC/kidney Ph2 data is likely next for INT

- INT Ph2 RCC study was fully enrolled in March 2025. MRNA expects data in 2H26/2027, subject to event accrual. MRNA previously noted the trial is potentially registrational. Trial design below.
- Keytruda is approved in adjuvant RCC based on KEYNOTE-564. Keytruda (Q3W) achieved a DFS HR of 0.68 and an OS HR of 0.62 in Ph3 relative to placebo. Specifically, the 24-month DFS rate is 77% for Keytruda monotherapy.

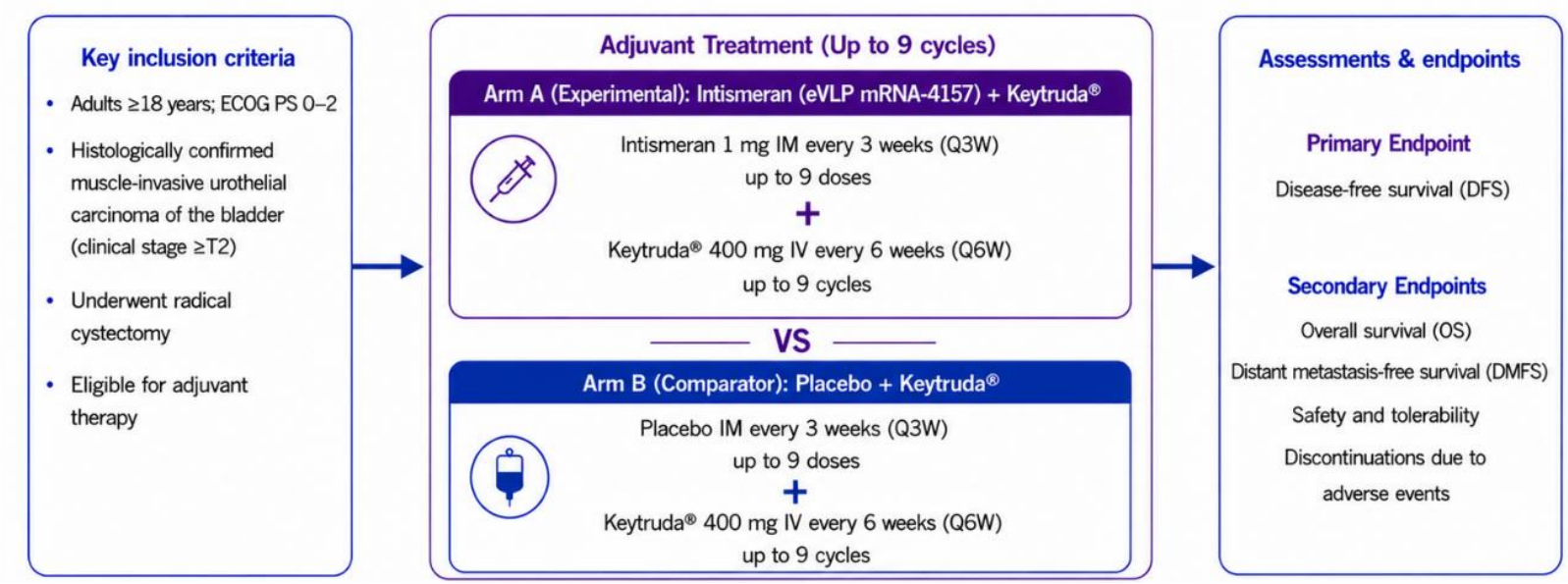


Source: Clinicaltrials.gov; Morgan Stanley Research

Morgan Stanley

For INT adjuvant MIBC/bladder Ph2 data likely follows in 2027

- INT MIBC Ph2 study was fully enrolled in Jan 2026. MRNA guided to data more likely in 2027, subject to event accrual.
- In the NCI/NIH AMBASSADOR Ph3 trial, Keytruda relative to observation showed a HR of 0.73 for DFS. The mDFS for Keytruda was 29.6 months. Specifically, the 24-month DFS rate is 54% for Keytruda monotherapy. No further analysis has been performed on OS since the required number of deaths to trigger a final analysis has not been reached.
- Keytruda + Padcev combo is approved for adjuvant MIBC based on KEYNOTE-B15.



Source: Clinicaltrials.gov; Morgan Stanley Research

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Market sizing

Keytruda provides a potential blueprint

- Keytruda is currently approved in 45 indications, providing a broad roadmap for INTs, particularly across immunologically "hot" tumors. INT is being developed in 6 tumor types broadly (subtypes not included).
- We model an annual price of ~$400k for INT vs. $200k for Keytruda (though avg. treatment duration lower for INT).

Cancer type	Keytruda approval setting	Key 2025 sales US / OUS ($bn)	MRNA/ MRK	BNTX/ Roche	Active INT setting	Avg duration Key vs. INT (mo.)	Risk-adj. intismeran autogene sales 2040E (MSe; $bn)
Melanoma 🔥	Metastatic/adjuvant	**$1.4 / $1.2**	✓		Adj. melanoma 1L metastatic	9.9 vs 6.2 5.6 vs 6.2	$6.0
NSCLC 🔥	Metastatic/adjuvant	**$5.2 / $5.3**	✓		Adj. NSCLC 1L squamous	11.7 vs 6.2 7.0 vs 6.2	$5.8
Urothelial / bladder 🔥	Metastatic/adjuvant	**$1.4 / Other**	✓		MIBC HR-NMIBC	10.4 vs 6.2 4.3 vs 6.2	$0.4
HNSCC 🔥	Metastatic/adjuvant	**$1.4 / $1.0**					
MSI-H / dMMR solid tumors 🔥	Metastatic	**$1.4 / Other**				6.2 vs na	
MSI-H / dMMR CRC 🔥	Metastatic			✓*	Adj. ctDNA+ CRC	11.1 vs na	
RCC 🔥	Metastatic/adjuvant	**$1.4 / $1.6**	✓		Adj. RCC	11.1 vs 6.2	$1.7
TNBC 🔥	Metastatic/adjuvant	**$3.3 / Other**				~12+ vs na	
Other 🔥 ❄	Metastatic/adjuvant	**$3.3 / $3.8**					
PDAC (INT-only) ❄	Not approved	—		✓	Adj. PDAC	na	

*same tumor type, different setting; 🔥 = hot tumor, ❄ = cold tumor

Source: Morgan Stanley Research; Company data

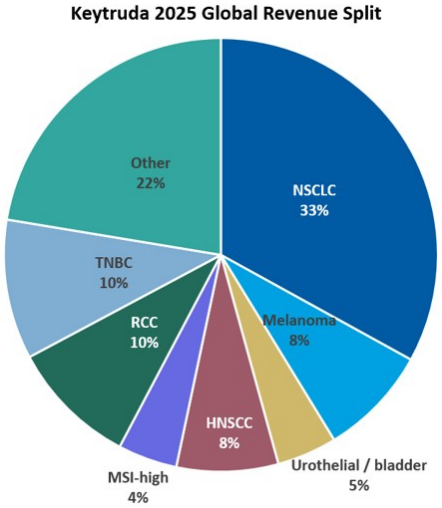
Morgan Stanley

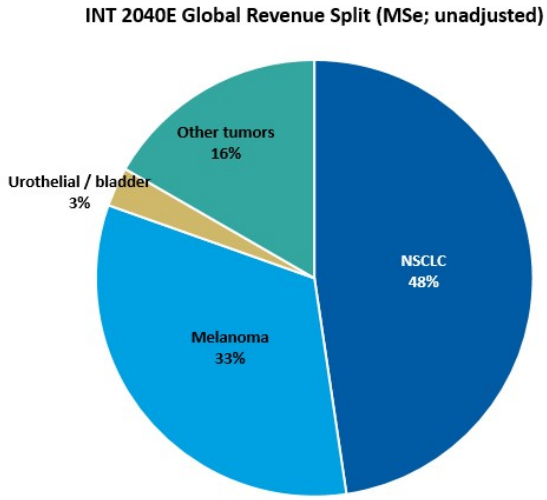
Market sizing

Keytruda sales across indications as a reference point

Cancer types	Keytruda 2025 US sales	% contribution by cancer types
NSCLC	$5,187	28%
Melanoma	$1,415	8%
H&N	$1,415	8%
Bladder	$1,415	8%
MSI-high	$1,415	8%
RCC	$1,415	8%
TNBC	$3,301	18%
Others	$3,301	18%
Total	**$18,861**	**100%**

Cancer types	Keytruda 2025 ex-US sales	% contribution by cancer types
NSCLC	$5,274	41%
Melanoma	$1,195	9%
H&N	$961	8%
RCC	$1,602	13%
Others	$3,782	30%
Total	**$12,814**	**100%**





Source: Company Data, Morgan Stanley Research

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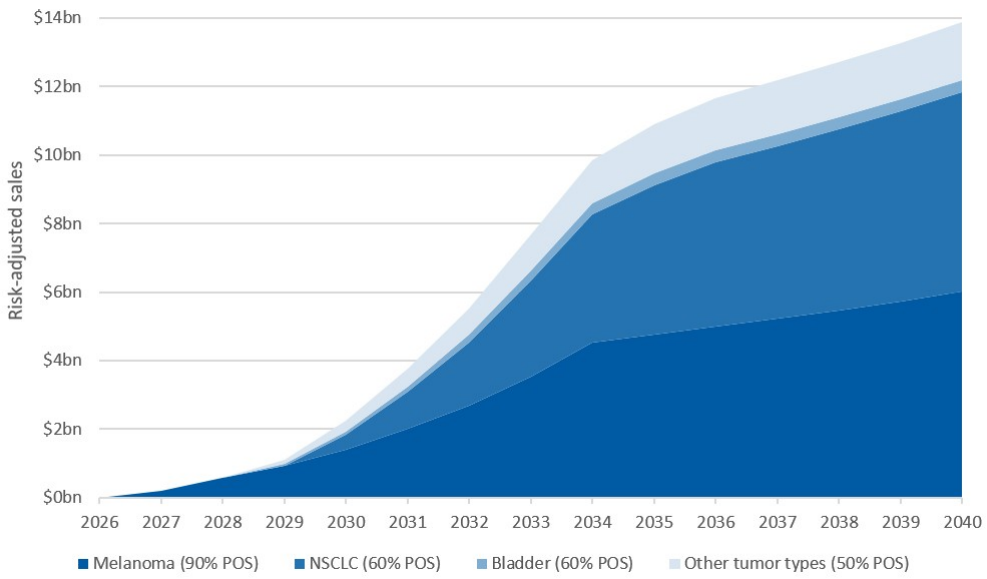
Market sizing

MS sales estimates for INT (2040 WW risk-adj. sales of ~$14bn)

- For INT we model 2040 risk-adjusted sales of ~$14bn (or unadjusted of ~$20bn) across indications.
- MRNA and MRK share global costs and profits 50/50.



- For BNTX/Roche's autogene cevumeran in CRC (15% POS) we model 2040 risk-adjusted sales of ~$600mn; global costs and profits split 50/50.

Source: Morgan Stanley Research

Morgan Stanley

Private Company Profiles

Morgan Stanley

Geneos Therapeutics

Founder and CEO: Niranjan Y Sardesai, PhD
Founded: 2017
Headquarters: Plymouth Meeting, PA
Employees: ~12

Geneos Therapeutics designs and manufactures a personalized immunotherapy for cancer (PIC): a DNA plasmid built individually for each patient, encoding up to 43 of that patient's own tumor neoantigens plus an interleukin-12 adjuvant, delivered by intradermal injection with electroporation. Spun out of Inovio Pharmaceuticals in 2017 and funded through five disclosed venture tranches since 2019, the Philadelphia-area company took its lead program, GT-30, through a complete Phase 1b/2a cohort in second-line advanced hepatocellular carcinoma (HCC): a peer-reviewed Nature Medicine publication reported a 30.6% objective response rate and a 19.9-month median overall survival, versus 12.9 to 15.1 months for historical pembrolizumab-alone controls. An investigator-sponsored Phase 1 in glioblastoma, published in Nature Cancer in May 2026, showed improved survival, and two patients across the two programs have now passed five years recurrence-free on PIC monotherapy. Geneos has not yet started GT-31, the randomized adjuvant HCC trial it says would be its first true efficacy test.

Source: FactSet, Samaya, Morgan Stanley Research

Morgan Stanley

Neoantigen Therapeutics

A Hangzhou biotech racing rivals to prove personalized neoantigen therapy works

CEO: Fan Mo
Founders: Fan Mo, Chen Shuqing
Founded: 2016
Headquarters: Hangzhou, Zhejiang Province, China
Employees: ND

Neoantigen Therapeutics, registered as Hangzhou Neoantigen Therapeutics Co., Ltd., designs individualized cancer treatments built from each patient's own tumor mutations rather than a single drug meant for every patient. Founded in 2016 out of Zhejiang University research, with investigator-initiated human trials since 2017, the company sequences a patient's tumor and healthy tissue and manufactures a matched candidate: a peptide vaccine (iNeo-Vac-P01), an mRNA vaccine (iNeo-Vac-R01), or an autologous T-cell therapy (iNeo-Vac-T01). P01 moved into registered, NMPA-cleared clinical trials in April 2023 and, per Chinese trade-press accounts, also holds an FDA IND, though no US trial site has been identified; R01 has had a company-sponsored IND application accepted by China's CDE for review since November 2025, while T01 remains investigator-initiated only, across esophageal, gastric, hepatocellular, and other cancers.

Source: FactSet, Samaya, Morgan Stanley Research

Morgan Stanley

Immorna

Racing rivals to prove mRNA-delivered CAR-T works

CEO: Zihao Wang
Founders: Zihao Wang, Zhijun Guo
Founded: 2019
Headquarters: Hangzhou & Shanghai, China; Morrisville (RTP), NC
Employees: ND

Immorna is a clinical-stage biotechnology company in Hangzhou, China that designs messenger RNA and self-replicating RNA medicines and pairs them with proprietary lipid nanoparticle delivery systems built to reach cells beyond the liver. Founded in 2019 by Zihao Wang and Zhijun Guo, both veterans of Novartis and GSK vaccine manufacturing, the company has advanced eight named RNA candidates, including five FDA Investigational New Drug clearances since 2022 spanning infectious disease vaccines, oncology, and dermatology. Its newest and most differentiated program, JCXH-213, is an in vivo CAR-T therapy — dosed in China under a separate regulatory pathway, not an FDA IND — now tested in both B-cell lymphoma and autoimmune disease. JCXH-213 delivers CAR-encoding mRNA directly into a patient's own T cells without removing them from the body.

Source: FactSet, Samaya, Morgan Stanley Research

Morgan Stanley

Shanghai Regenelead Therapies

Hengrui's majority-owned gene, mRNA and cell therapy unit, now half-weighted to oncology

Founder and CEO: Cheng Liao
Founded: 2021
Headquarters: Shanghai, China
Employees: ND

Regenelead is a clinical-stage l company built inside Jiangsu Hengrui Medicine's Shanghai gene-therapy unit and spun off in August 2021 to house AAV gene therapy, mRNA therapeutics and, since 2025, cell therapy under one roof. Rather than committing to one lead asset, it pushed six differentiated candidates to CDE clinical clearance in about seventeen months: an mRNA-delivered growth-factor therapy for limb ischemia and chronic wounds, a dual-gene AAV treatment injected directly into the brain for Parkinson's disease, a dual-target AAV therapy for wet age-related macular degeneration, a personalized neoantigen mRNA cancer vaccine, a KRAS-mutant shared-antigen mRNA cancer vaccine, and a cell therapy for solid tumors. Oncology, not gene therapy, is now Regenelead's largest single bucket by candidate count, and one oncology candidate is already dosing patients in combination with Hengrui's own approved PD-L1 antibody, adebrelimab. None has yet reported efficacy data.

Source: FactSet, Samaya, Morgan Stanley Research

Morgan Stanley

NeoCura

A personalized cancer-vaccine co. still in early trials

CEO: Wang Yi
Founders: Wang Yi, Zhou Yahui
Founded: 2017
Headquarters: Beijing, China
Employees: 51-200

NeoCura is a privately held, Beijing-based biotech that designs individualized mRNA cancer vaccines: it sequences a patient's tumor, uses an in-house AI platform to predict which resulting mutations (neoantigens) will trigger an immune response, then manufactures a patient-specific vaccine. Founded in 2017 by CEO Wang Yi (previously a research fellow at Harvard Medical School's Dana-Farber Cancer Institute) and incubated by Kunlun Wanwei founder Zhou Yahui, the company has tested its lead candidate, NEO_PLIN2101, in investigator-initiated Phase 1 trials at top-tier China cancer hospitals since 2020, including a 2021 collaboration pairing it with Innovent Biologics' approved PD-1 drug sintilimab. NeoCura has raised at least $116 million in disclosed equity since 2020, but has not disclosed a valuation.

Source: FactSet, Samaya, Morgan Stanley Research

Morgan Stanley

Synthgene Biotechnology

A Nanjing University spinout selling the materials mRNA and IVD makers build on

Founder and CEO: Tong Kun
Founded: 2018
Headquarters: Nanjing, Jiangsu, China
Employees: 200+

Jiangsu Synthgene Biotechnology, founded in 2018 by a team of Nanjing University chemistry PhDs, manufactures the upstream chemical inputs that mRNA, oligonucleotide, in vitro diagnostic, and cell and gene therapy developers turn into finished products: nucleotides, cap analogs (including its FDA-DMF-referenced CAP5), , and enzymes, plus antibody discovery and raw materials. Its personalized neoantigen mRNA cancer vaccine, SJ-neo006, is also being evaluated in one early exploratory trial in resectable pancreatic cancer (NCT06326736), sponsored by Jinling Hospital, a narrow but real proprietary program on top of the raw material business. The company has raised at least 47mn dollars in disclosed venture equity since 2019 and reports roughly 200 staff.

Source: FactSet, Samaya, Morgan Stanley Research

Morgan Stanley

Abogen Biosciences

Clinical-stage mRNA vaccine maker now pivots to oncology

Founder and CEO: Bo Ying
Founded: 2019
Headquarters: Suzhou, Jiangsu, China
Employees: ~70-90

Abogen Biosciences is a Suzhou-based clinical-stage biotechnology company that designs messenger RNA medicines around its own lipid nanoparticle delivery platform, spanning infectious-disease vaccines and, increasingly, cancer immunotherapy. Founded in January 2019, Abogen built ARCoV, China's first mRNA vaccine cleared for human trials, together with the Academy of Military Medical Sciences and Walvax Biotechnology, and raised more than $1.13bn in disclosed equity by late 2021 on the strength of that program. Abogen's near-term case now rests on a widening pipeline, including a KRAS cancer vaccine cleared for trials in both the United States and China and an mRNA-encoded T-cell engager that reported encouraging early tumor responses in 2026.

Source: FactSet, Samaya, Morgan Stanley Research

Valuation Methodology and Risks

BioNTech SE (BNTX.O)

We derive our PT from a DCF based on our forecasts of BioNTech's existing and future products through 2040E. We use a 10% discount rate and a 3.0% terminal growth rate.

Risks to Upside

- Covid-19 vaccines become mainstays and a significant portion of population gets annual booster
- Positive readouts from mRNA cancer vaccines
- BNT327 trials read out positively and take significant I/O market share

Risks to Downside

- Minimal Covid vaccine tail
- Failure of mRNA cancer vaccines readouts
- Failure of gotistobart (anti-CTLA-4 antibody)
- Failure of BNT327

Merck & Co., Inc. (MRK.N)

Our 12-month price target is based on a 17x P/E multiple applied to our 3Q27-2Q28 EPS estimate of $10.52. This multiple is above MRK's 10-year average (~14x) and the industry (15x) based on the company's robust emerging pipeline.

Risks to Upside

- MRK develops Keytuda co-formulations and extends the tail of the franchise
- MRK's pipeline is successful and contributes revenue towards the end of the decade
- ROI positive M&A

Risks to Downside

- MRK's Keytuda life cycle management strategy is unsuccessful
- MRK's pipeline is unsuccessful and will not contribute revenue in the outer-years
- Lack of M&A or ROI negative M&A

Moderna Inc (MRNA.O)

We derive our PT from a DCF based on our forecasts of Moderna's mRNA based product candidates through 2040E. We use a 10% discount rate and a 4% terminal growth rate.

Risks to Upside

- Supporting clinical data across several modalities
- Meeting timelines and continuing to expand a diversified pipeline
- Strong Launch drugs in multiple indications including flu and INT.

Risks to Downside

- Efficacy and/or safety concerns cause investors to write-off subsequent readouts across additional modalities

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Global Stock Ratings Distribution

(as of July 31, 2026)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.

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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1529	42%	442	47%	29%	750	43%
Equal-weight/Hold	1582	43%	396	42%	25%	773	44%
Not-Rated/Hold	3	0%	1	0%	33%	1	0%
Underweight/Sell	560	15%	97	10%	17%	217	12%
Total	3,674		936			1741	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

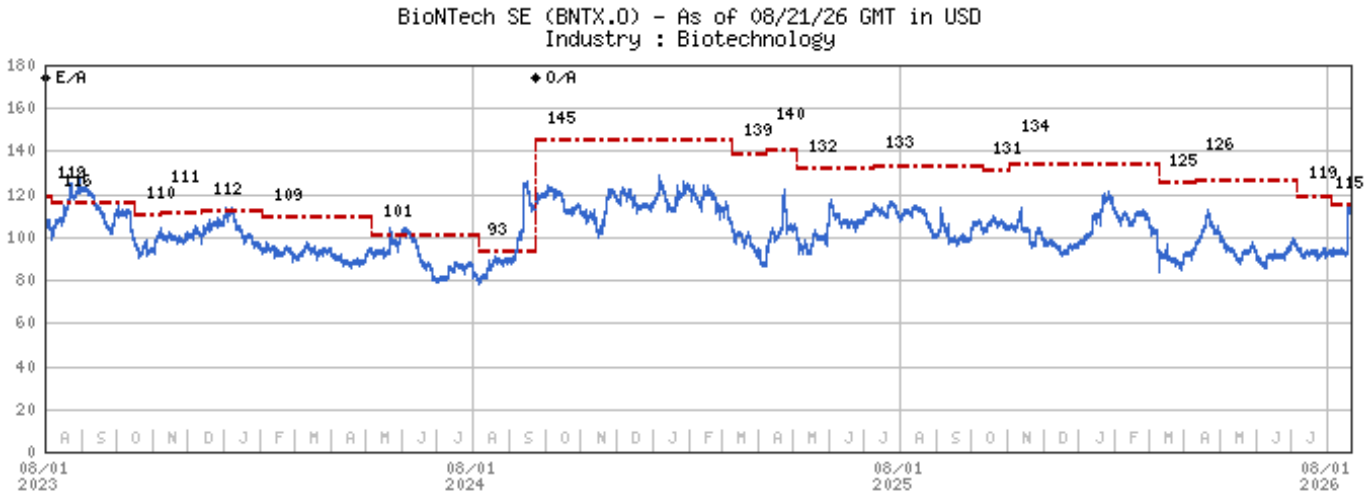
Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Stock Price, Price Target and Rating History (See Rating Definitions)



Stock Rating History: 12/16/21 : E/I; 11/5/22 : E/A; 9/23/24 : O/A

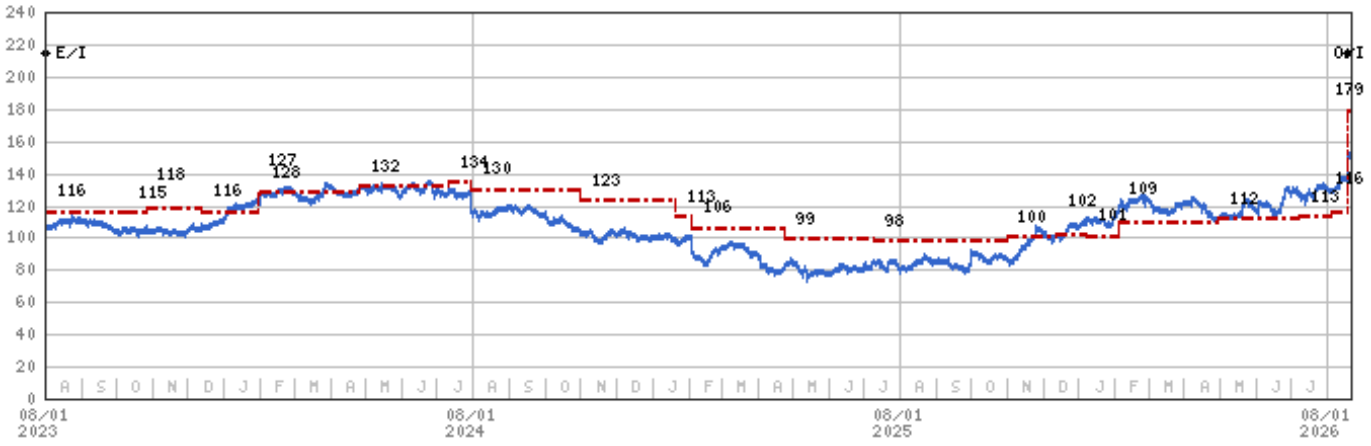
Price Target History: 12/16/21 : 294; 1/18/22 : 284; 1/31/22 : 217; 4/12/22 : 197; 5/9/22 : 195; 7/14/22 : 194; 11/7/22 : 203; 1/23/23 : 216; 3/27/23 : 150; 5/9/23 : 124; 7/11/23 : 119; 8/7/23 : 116; 10/17/23 : 110; 11/7/23 : 111; 12/12/23 : 112; 2/2/24 : 109; 5/6/24 : 101; 8/5/24 : 93; 9/23/24 : 145; 3/10/25 : 139; 4/8/25 : 140; 5/5/25 : 132; 7/10/25 : 133; 10/10/25 : 131; 11/3/25 : 134; 3/10/26 : 125; 4/10/26 : 126; 7/7/26 : 119; 8/4/26 : 115

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) Stock Price (Covered by Current Analyst)
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Merck & Co., Inc. (MRK.N) - As of 08/21/26 GMT in USD
Industry : Major Pharmaceuticals



Stock Rating History: 8/1/21 : O/A; 9/7/21 : E/A; 4/6/22 : E/I; 8/19/26 : O/I

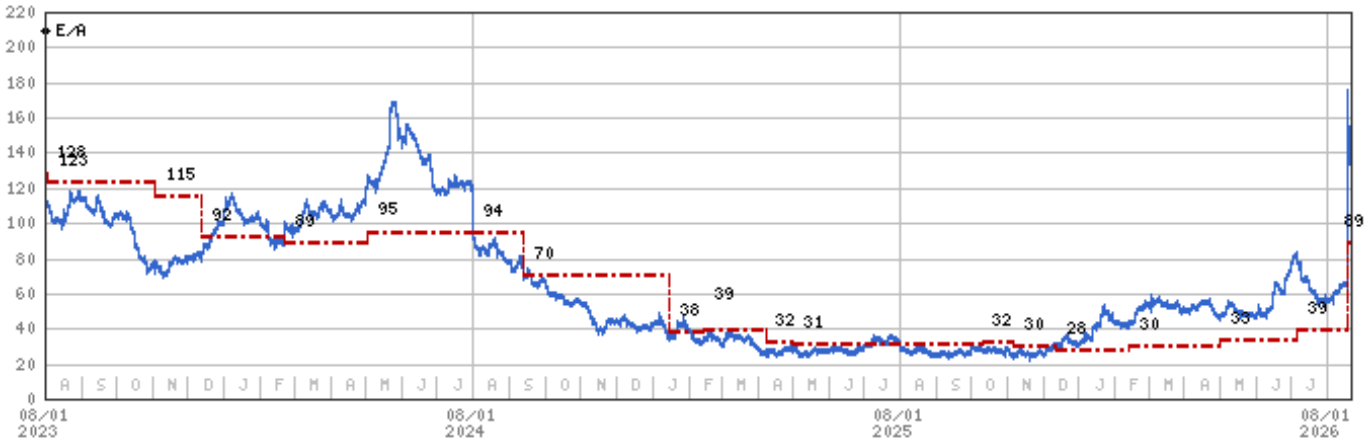
Price Target History: 12/21/20 : 90; 9/7/21 : 85; 10/12/21 : 88; 10/29/21 : 90; 11/8/21 : 88; 11/29/21 : 82; 4/6/22 : 80; 4/28/22 : 87; 7/8/22 : 88; 7/28/22 : 92; 10/12/22 : 91; 10/27/22 : 100; 2/2/23 : 99; 4/27/23 : 109; 8/1/23 : 116; 10/10/23 : 115; 10/26/23 : 118; 12/12/23 : 116; 1/29/24 : 127; 2/1/24 : 128; 4/25/24 : 132; 7/11/24 : 134; 7/30/24 : 130; 10/31/24 : 123; 1/21/25 : 113; 2/4/25 : 106; 4/24/25 : 99; 7/10/25 : 98; 10/31/25 : 100; 12/12/25 : 102; 1/8/26 : 101; 2/3/26 : 109; 4/30/26 : 112; 7/8/26 : 113; 8/4/26 : 116; 8/19/26 : 179

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) Stock Price (Covered by Current Analyst)
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Moderna Inc (MRNA.O) - As of 08/21/26 GMT in USD
Industry : Biotechnology



Stock Rating History: 8/1/21 : E/I; 11/5/22 : E/A

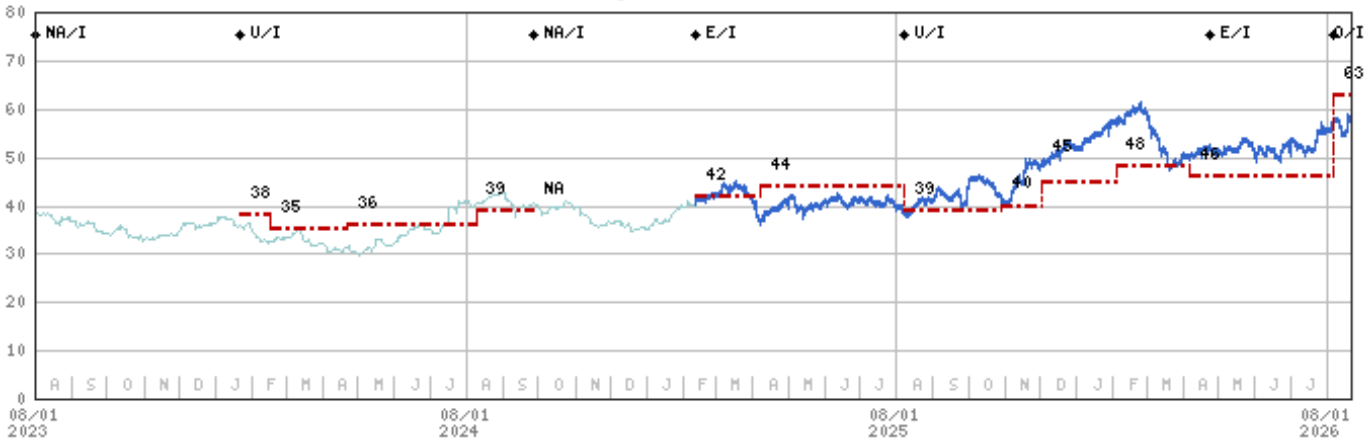
Price Target History: 5/6/21 : 190; 9/7/21 : 337; 11/5/21 : 313; 1/18/22 : 315; 1/31/22 : 213; 2/25/22 : 205; 4/12/22 : 217; 5/4/22 : 199; 8/3/22 : 197; 10/18/22 : 175; 11/3/22 : 170; 12/15/22 : 209; 1/23/23 : 205; 2/23/23 : 185; 5/5/23 : 153; 7/11/23 : 128; 8/3/23 : 123; 11/3/23 : 115; 12/12/23 : 92; 2/22/24 : 89; 5/2/24 : 95; 8/1/24 : 94; 9/13/24 : 70; 1/15/25 : 38; 2/14/25 : 39; 4/8/25 : 32; 5/1/25 : 31; 10/10/25 : 32; 11/6/25 : 30; 12/12/25 : 28; 2/13/26 : 30; 5/1/26 : 33; 7/7/26 : 39; 8/19/26 : 89

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -·- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) ▬
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Roche Holding AG (RHHBY.PK) - As of 08/21/26 GMT in USD
Industry : Pharmaceuticals



Stock Rating History: 8/1/21 : NA/I; 1/22/24 : U/I; 9/27/24 : NA/I; 2/12/25 : E/I; 8/8/25 : U/I; 4/24/26 : E/I; 8/7/26 : O/I

Price Target History: 1/22/24 : 38; 2/16/24 : 35; 4/22/24 : 36; 8/9/24 : 39; 9/27/24 : NA; 2/12/25 : 42; 4/8/25 : 44; 8/8/25 : 39; 10/29/25 : 40; 12/2/25 : 45; 2/3/26 : 48; 4/7/26 : 46; 8/7/26 : 63

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -·- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) ▬
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

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INDUSTRY COVERAGE: Major Pharmaceuticals

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/21/2026)

Terence C Flynn, Ph.D.		
Abbvie Inc. (ABBV.N)	O (05/11/2020)	$264.96
Bristol Myers Squibb Co (BMY.N)	U (04/06/2022)	$67.01
Eli Lilly & Co. (LLY.N)	O (09/03/2020)	$1,255.40
Johnson & Johnson (JNJ.N)	O (01/28/2026)	$270.24
Merck & Co., Inc. (MRK.N)	O (08/19/2026)	$152.55
Organon & Co. (OGN.N)	++	$13.75
Pfizer Inc (PFE.N)	E (07/30/2019)	$28.07
Royalty Pharma Plc (RPRX.O)	O (05/16/2025)	$61.31

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* Historical prices are not split adjusted.

INDUSTRY COVERAGE: Biotechnology

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/21/2026)
Judah C. Frommer, CFA		
4D Molecular Therapeutics Inc (FDMT.O)	E (11/06/2025)	$15.83
Abivax (ABVX.O)	O (07/23/2025)	$114.95
AgomAb Therapeutics NV (AGMB.O)	O (03/03/2026)	$13.25
Arcutis Biotherapeutics, Inc. (ARQT.O)	O (07/02/2025)	$25.08
Avalyn Pharma Inc (AVLN.O)	O (05/25/2026)	$38.37
Belite Bio Inc (BLTE.O)	O (01/06/2026)	$161.06
Bicara Therapeutics (BCAX.O)	O (10/08/2024)	$23.90
Celldex Therapeutics Inc (CLDX.O)	O (03/20/2025)	$40.38
Compass Pathways PLC (CMPS.O)	O (08/08/2025)	$13.33
enGene Holdings Inc. (ENGN.O)	U (06/18/2026)	$1.78
Evommune Inc (EVMN.N)	O (12/01/2025)	$14.02
Genmab A/S (GMAB.O)	E (02/16/2026)	$33.45
Immix Biopharma (IMMX.O)	O (03/25/2026)	$13.66
Incyte Corp (INCY.O)	E (07/02/2025)	$127.81
Kalaris Therapeutics (KLRS.O)	O (04/16/2026)	$4.15
Kymera Therapeutics Inc (KYMR.O)	O (07/02/2025)	$119.80
Lakefront Biotherapeutics (LKFT.O)	E (07/10/2026)	$28.80
ProKidney Corp (PROK.O)	E (11/10/2022)	$1.61
PTC Therapeutics (PTCT.O)	O (03/06/2025)	$69.82
Regenxbio Inc (RGNX.O)	O (11/15/2024)	$10.72
Trevi Therapeutics Inc (TRVI.O)	O (08/21/2025)	$17.96
Zenas Biopharma Inc (ZBIO.O)	E (01/05/2026)	$32.29
Maxwell Skor		
Achieve Life Sciences Inc (ACHV.O)	O (08/13/2026)	$7.99
Adagene Inc. (ADAG.O)	E (01/30/2025)	$4.02
Ascendis Pharma A/S (ASND.O)	O (05/05/2025)	$253.29
Atea Pharmaceuticals Inc (AVIR.O)	E (08/12/2024)	$5.43
Bicycle Therapeutics Plc (BCYC.O)	E (02/14/2022)	$4.37
Crinetics Pharmaceuticals (CRNX.O)	++	$84.69
CRISPR Therapeutics AG (CRSP.O)	E (06/11/2026)	$59.50
Cytokinetics Inc (CYTK.O)	O (02/13/2025)	$76.84
Insmed Inc (INSM.O)	O (03/30/2026)	$125.77
Monopar Therapeutics (MNPR.O)	O (01/09/2026)	$107.72
Pharvaris N.V. (PHVS.O)	O (08/15/2023)	$36.27
Sana Biotechnology, Inc (SANA.O)	O (03/01/2021)	$3.91
Tscan Therapeutics Inc (TCRX.O)	E (11/13/2025)	$0.78
Ultragenyx Pharmaceutical Inc (RARE.O)	O (03/27/2019)	$25.83
Michael E Ulz		
Aardvark Therapeutics Inc. (AARD.O)	U (05/15/2026)	$6.82

Alnylam Pharmaceuticals Inc (ALNY.O)	E (09/09/2022)	$236.22
Arrowhead Pharmaceuticals Inc (ARWR.O)	O (04/21/2026)	$87.11
BioAge Labs Inc (BIOA.O)	E (12/05/2025)	$9.48
Cabaletta Bio Inc (CABA.O)	O (01/27/2023)	$3.13
Dyne Therapeutics Inc (DYN.O)	O (04/30/2024)	$26.10
Fractyl Health Inc (GUTS.O)	E (01/29/2026)	$0.78
Ionis Pharmaceuticals Inc (IONS.O)	O (07/30/2025)	$59.74
Kyverna Therapeutics (KYTX.O)	O (03/04/2024)	$8.42
Mirum Pharmaceuticals (MIRM.O)	O (11/13/2023)	$96.31
Rhythm Pharmaceuticals Inc (RYTM.O)	O (12/19/2023)	$110.00
Rocket Pharmaceuticals Inc (RCKT.O)	E (05/27/2025)	$3.51
Sarepta Therapeutics Inc (SRPT.O)	E (06/16/2025)	$18.79
Silence Therapeutics Plc (SLN.O)	O (05/08/2023)	$13.27
Tenaya Therapeutics Inc (TNYA.O)	O (08/24/2021)	$0.70
Viking Therapeutics Inc (VKTX.O)	O (06/27/2024)	$33.89
Vir Biotechnology Inc (VIR.O)	O (01/08/2025)	$9.78
Zentalis Pharmaceuticals Inc (ZNTL.O)	E (06/18/2024)	$3.83
Sean Laaman, Ph.D.		
ABSCI CORP (ABSI.O)	E (01/08/2026)	$9.55
Acadia Pharmaceuticals Inc (ACAD.O)	E (08/06/2024)	$29.50
Alector Inc (ALEC.O)	U (11/26/2024)	$2.36
argenx SE (ARGX.O)	O (07/02/2025)	$1,039.78
Axsome Therapeutics (AXSM.O)	E (01/08/2026)	$207.77
BeOne Medicines (ONC.O)	O (12/02/2024)	$374.47
Biomarin Pharmaceutical Inc (BMRN.O)	O (04/27/2026)	$66.70
BridgeBio Oncology Therapeutics (BBOT.O)	O (12/05/2025)	$9.08
BridgeBio Pharma Inc (BBIO.O)	O (01/06/2026)	$81.50
CG Oncology (CGON.O)	O (02/19/2024)	$79.81
Contineum Therapeutics (CTNM.O)	E (01/08/2026)	$17.19
Cullinan Therapeutics (CGEM.O)	O (03/06/2025)	$21.68
Denali Therapeutics Inc (DNLI.O)	O (03/06/2025)	$24.92
Disc Medicine Inc (IRON.O)	O (11/04/2024)	$79.81
Eikon Therapeutics Inc (EIKN.O)	O (03/02/2026)	$11.39
Erasca, Inc. (ERAS.O)	E (08/17/2025)	$17.63
Exelixis Inc. (EXEL.O)	E (01/08/2026)	$54.08
Generate Biomedicines Inc (GENB.O)	O (03/24/2026)	$16.12
Halozyme Therapeutics, Inc (HALO.O)	O (08/05/2025)	$108.17
Immunocore Holdings Ltd (IMCR.O)	E (12/12/2024)	$36.88
MapLight Therapeutics (MPLT.O)	E (07/27/2026)	$11.21
Neurocrine Biosciences Inc (NBIX.O)	E (01/08/2026)	$152.57
Recursion Pharmaceuticals Inc (RXRX.O)	E (05/22/2023)	$3.50
Schrodinger Inc. (SDGR.O)	E (11/19/2021)	$19.71
Terence C Flynn, Ph.D.		
Alumis Inc. (ALMS.O)	O (05/30/2025)	$24.17
Amgen Inc. (AMGN.O)	E (10/16/2023)	$439.33
Arcus Biosciences Inc. (RCUS.N)	E (01/08/2026)	$30.34
Arvinas Inc (ARVN.O)	E (04/06/2022)	$9.37
Biogen Inc (BIIB.O)	E (10/31/2024)	$216.78
Biohaven Ltd (BHVN.N)	O (07/24/2024)	$13.85
BioNTech SE (BNTX.O)	O (09/23/2024)	$116.57
Gilead Sciences Inc. (GILD.O)	O (01/10/2025)	$146.12
Intellia Therapeutics Inc (NTLA.O)	E (01/26/2025)	$12.84
Legend Biotech Corp (LEGN.O)	O (01/31/2022)	$21.82
Moderna Inc (MRNA.O)	E (12/16/2020)	$145.13
Nurix Therapeutics Inc. (NRIX.O)	O (01/08/2026)	$26.72

Prime Medicine Inc (PRME.O)	E (11/14/2022)	$3.39
Regeneron Pharmaceuticals Inc. (REGN.O)	E (12/03/2025)	$834.04
Structure Therapeutics Inc (GPCR.O)	O (09/22/2024)	$49.09
United Therapeutics Corp (UTHR.O)	E (07/11/2024)	$513.12
Vertex Pharmaceuticals (VRTX.O)	++	$548.05

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INDUSTRY COVERAGE: Pharmaceuticals

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/21/2026)
Sarita Kapila		
AstraZeneca Plc (AZN.L)	O (02/12/2025)	12,240p
AstraZeneca Plc (AZN.N)	O (02/12/2025)	$165.98
GSK plc (GSK.L)	U (02/12/2025)	1,919p
GSK plc (GSK.N)	U (02/12/2025)	$52.41
Roche Holding AG (RHHBY.PK)	O (08/07/2026)	$58.10
Roche Holding AG (ROPC.S)	O (08/07/2026)	SFr 375.60
Sanofi SA (SASY.PA)	E (05/01/2026)	€78.94
Sanofi SA (SNY.N)	E (05/01/2026)	$45.84
UCB S.A. (UCB.BR)	E (03/06/2026)	€221.70
Thibault Boutherin		
Alvotech SA (ALVO.O)	O (10/14/2025)	$4.43
Bayer AG (BAYGn.DE)	O (12/03/2025)	€48.04
Galderma Group AG (GALD.S)	O (07/30/2026)	SFr 171.55
Grifols SA (GRLS.MC)	E (03/10/2026)	€9.91
Lonza Group AG (LONN.S)	O (11/25/2025)	SFr 592.20
Merck KGaA (MRCG.DE)	E (02/12/2025)	€137.95
Novartis AG (NOVN.S)	O (10/31/2025)	SFr 127.42
Novartis AG (NVS.N)	O (10/31/2025)	$158.86
Novo Nordisk A/S (NOVOb.CO)	E (03/03/2026)	DKr 300.85
Novo Nordisk A/S (NVO.N)	E (03/03/2026)	$46.74
Sandoz Group AG (SDZ.S)	U (02/27/2026)	SFr 73.84
Sartorius AG (SATG_p.DE)	O (02/12/2025)	€246.80
Sartorius Stedim Biotech SA (STDM.PA)	O (02/12/2025)	€193.50
Teva Pharmaceutical Industries Ltd. (TEVA.N)		$37.34

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