

In Vivo CAR-T — An Open-Source Competitive Intelligence Report

How four public data layers signalled a \$14 billion modality shift before the market named it

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1. Bottom line

Between 9 August and 16 September 2026 — a six-week window — the U.S. FDA cleared at least three Investigational New Drug applications for *in vivo* CAR-T therapies whose supporting evidence came from investigator-initiated trials run outside the United States, in cohorts as small as eleven patients. In at least two of those clearances the agency did not simply accept the foreign data as background. It let the sponsor skip ahead: a direct entry into Phase 1b in one case, an accelerated dose-titration scheme and a subcutaneous route in another.

That is the finding. Not that *in vivo* CAR-T is promising — every trade outlet has said so, and up to \$14.4 billion of disclosed deal value since March 2025 (six deals, five acquirers, milestones included) says it louder. The finding is that **the regulatory bottleneck that made this modality a long-dated bet has moved, it moved in public, and it moved three times in six weeks**. No source consulted for this report treats those three clearances as one pattern. Each was covered as a company milestone.

Confidence: Medium-High. Each underlying event is independently verifiable [V]. Reading them as a connected shift in agency posture is an inference [E] — the FDA publishes no rationale for an IND clearance, so the pattern is real but its cause is not established. Section 11 sets out what would prove it wrong.

Why this is worth money. An organisation still pricing *in vivo* CAR-T against a 2029–2030 clinical timeline is working from a stale assumption. The same organisation could have caught this from free public sources, in an afternoon, on any day in the past five weeks.

2. Why this subject

The subject was not chosen for interest. It was chosen because it scored on all four public signal layers at once, which is rare and is itself the selection criterion.

Clarivate's framing — that competitive signals sit in clinical trial registries, patent offices, regulatory dockets and deal disclosures, and that the differentiator is synthesis rather than access — is correct and worth borrowing ([Clarivate, 2026](#)). What that article does not do is run the method on a live subject and publish the result. This report does.

In vivo CAR-T — generating CAR-T cells inside the patient rather than manufacturing them in a facility — cleared every screen:

Screen	Test applied	Result
Recency	Anchor event inside 30 days	NEJM publication 2 Sep 2026; two FDA IND clearances 14 and 16 Sep 2026
Registry depth	Enough registered trials to show structure	30+ registered trials worldwide; named NCT records across US, China, Australia
Capital at risk	Deals large enough to force decisions	Up to \$14.4 bn in disclosed deal value since March 2025 (milestones included)
Regulatory traffic	Dated agency actions in the window	At least 4 FDA IND clearances in 2026
Contradiction	A counter-signal, not just a hype curve	One patient death and all-patient grade 3+ toxicity in the first published dataset

The last row matters most. A subject with no contradiction in the public record is usually a subject where the analyst has only read the press releases. The counter-evidence is in Section 10.

Scope. This is a modality-level landscape, not a single-asset due diligence. It does not value any company, and it is not investment advice.

3. Method and evidence standard

Every claim in this report carries a reliability code. Nothing is asserted without one.

Code	Meaning
[V]	Verified against a primary or official source (registry record, regulatory filing, company release, peer-reviewed paper)
[D]	Reported by a named secondary source (trade press, analyst note) and not independently confirmed
[E]	Estimate, inference or working hypothesis by this analyst
[?]	Unknown, and named as unknown

Sources used. ClinicalTrials.gov registry records; FDA IND clearance announcements as issued by sponsors; company press releases and SEC filings; peer-reviewed literature (*NEJM*, *Nature Medicine*, *Science*); published patent applications; specialist trade press. All free and public. No subscription database, no proprietary feed, no privileged information.

Two disclosures about method, because they affect how much weight to put on what follows:

1. **ClinicalTrials.gov renders its records in JavaScript**, so the registry pages could not be opened directly in this environment. Registry field values quoted here come from structured extracts of those records returned by search, and each was cross-checked against at least one independent account. They are

marked [V] only where that second source agrees. This is a real limitation and it is the first thing to fix before this analysis is sold to anyone.

2. **The Clarivate article itself blocks automated access.** Its argument is quoted here from the publicly indexed extract, which is sufficient to characterise its framework fairly but not to review it in full.

What would make this stronger. Direct registry queries through the ClinicalTrials.gov API, giving exact trial counts, sponsor-level aggregation and a dated status-change history rather than point-in-time observations. That is a tooling fix, not a research one.

4. Signal layer 1 — Pipeline

The modality moved from preclinical curiosity to a named, dated, multi-sponsor clinical pipeline inside 24 months, and almost all of the early human data was generated outside the United States.

In vivo CAR-T replaces the manufacturing step at the centre of conventional cell therapy. Instead of harvesting a patient's T cells, engineering them in a facility over several weeks and infusing them back after lymphodepleting chemotherapy, a single intravenous dose — a targeted lipid nanoparticle carrying mRNA, or an engineered lentiviral vector — reprograms the T cells where they already are. Two delivery families dominate: **targeted LNP/mRNA** (transient, redosable) and **lentiviral vectors** (integrating, single-dose).

Named programmes with public evidence

Asset	Sponsor	Target · delivery	Indication	Public evidence [V]
JY231	Shenzhen Genocury	CD19 · lentiviral (CD3-directed)	Neurologic autoimmune	NEJM 2 Sep 2026 , n=16
ESO-T01	EsoBiotec / AstraZeneca	BCMA · lentiviral (ENaBL)	R/R multiple myeloma	<i>Nature Medicine</i> Mar 2026, n=5; NCT06691685
KLN-1010	Kelonia / Eli Lilly	BCMA · lentiviral	R/R multiple myeloma	FDA IND Feb 2026; inMMMyCAR NCT07075185 , Australia
IASO208	IASO Bio	CD20 · lentiviral (COCV-G)	R/R B-NHL	FDA IND 16 Sep 2026 ; 11 patients dosed
VV169	Vyriad	BCMA	R/R multiple myeloma	FDA IND 14 Sep 2026; NCT07802717, Mayo Clinic
RXIM002	RiboX Therapeutics	CD19 · circRNA-	Immune thrombocytopenia	FDA IND Aug 2026

		tLNP		
CPTX2309 (ABBV-619)	Capstan / AbbVie	CD19 · anti- CD8 tLNP- mRNA	B-cell autoimmune	Phase 1
ORN-252	Orna / Eli Lilly	CD19 · circRNA- LNP	B-cell autoimmune	Described as trial- ready at acquisition
UB-VV111	Umoja / AbbVie	CD19 · lentiviral (VivoVec)	B-cell cancers	Phase 1, recruiting
HN2301	Academic (China)	CD19 · anti- CD8 LNP- mRNA	Refractory Graves' disease	NCT07333677

The structural fact

A William Blair landscape review from late 2025 counted 12 companies with an *in vivo* CAR-T asset in clinical development and found that **only one — Umoja — was running its first clinical work in the United States**. Seven were in investigator-initiated trials in China; four had started in Australia [D, single analyst source, treated as a baseline rather than a current count].

That is not an accident of science. It is an artefact of how quickly a first-in-human study can be opened in each jurisdiction. It also explains why Section 6 matters: if the data is being made in China and Australia, the question that decides the modality's commercial timetable is whether the FDA will accept it.

The 2 September *NEJM* correspondence is the field's credibility event. Sixteen patients with refractory neurologic autoimmune disease — including seven with progressive multiple sclerosis — received one infusion of JY231. All sixteen generated CAR-T cells *in vivo*, without cell manufacturing and without lymphodepleting chemotherapy. Complete B-cell depletion was reported across the cohort, with disease-specific clinical improvement at six months. Grade 1 cytokine release syndrome occurred in 11 of 16; no ICANS was reported; three patients had reversible grade 3–4 neutropenia [V].

That safety profile is materially milder than the myeloma dataset in Section 10. The difference — autoimmune versus heavily pretreated cancer patients, lentiviral design, tumour burden — is the single most important open scientific question in this field.

5. Signal layer 2 — Deals

Five large-cap acquirers, across six deals, committed up to \$14.4 billion of disclosed deal value to *in vivo* cell therapy in nineteen months, and most of it bought assets that had not yet produced a Phase 1 readout.

Announced	Acquirer	Target	Disclosed value	Platform
Apr 2026	Eli Lilly	Kelonia Therapeutics	\$3.25 bn upfront, up to \$7.0 bn	Lentiviral (iGPS)
Feb 2026	Eli Lilly	Orna Therapeutics	up to \$2.4 bn	Circular RNA + LNP
Oct 2025	Bristol Myers Squibb	Orbital Therapeutics	\$1.5 bn	Circular RNA + LNP
Aug 2025	Gilead (Kite)	Interius BioTherapeutics	\$350 m	Lentiviral
Jun 2025	AbbVie	Capstan Therapeutics	up to \$2.1 bn	Targeted LNP + mRNA
Mar 2025	AstraZeneca	EsoBiotec	\$425 m upfront, up to \$1.0 bn	Lentiviral (ENaBL)

Sources: [AstraZeneca press release](#) and [SEC Form 6-K](#) for EsoBiotec; [PharmaVoice](#) and [Fierce Biotech](#) for the remainder. Headline figures include contingent milestones except where an upfront is stated separately; the upfront/milestone split was not disclosed for Orna [?].

Three readings, in descending confidence:

1. **The buyers are not buying assets, they are buying delivery platforms** [V]. Every target in the table is a delivery technology — LNP chemistry, circular RNA, or an engineered viral envelope — not a single molecule. Capstan and Orbital were acquired with lead programmes at or near preclinical stage.
2. **Pricing implies conviction about the platform, not the data** [E]. One analysis puts the Capstan return at roughly 6× the venture capital raised and Orna at about 4.7× [D, single source]. Returns of that shape on preclinical platforms mean acquirers were competing on scarcity, not on de-risked evidence.
3. **Licensing has now overtaken acquisition as the entry route** [E]. Johnson & Johnson took the collaboration path with [Sail Biomedicines](#) on 29 July 2026; Moderna [disclosed its own internal programme](#) in June 2026 rather than buying one; Cartesian licensed WestGene's LNP platform instead of acquiring it. **Interpretation: the supply of independent, acquirable platforms is close to exhausted.** That is a prediction with a clear test — see Section 11.

What the deal layer does *not* tell you. No transaction in the table was priced off a randomised trial, because none exists. Capital moved on platform logic and on Phase 1 signals in cohorts of five to eighteen patients. That is worth stating plainly to any client who reads the dollar figures as validation of the clinical case.

6. Signal layer 3 — Regulatory (the finding)

This is the layer where something changed, and it is the layer nobody has aggregated.

Four FDA IND clearances for *in vivo* CAR-T in 2026 are on the public record. Three fall inside six weeks.

Date	Asset	Sponsor	Evidence base accepted	Concession granted
Feb 2026	KLN-1010	Kelonia	Phase 1 inMMMyCAR, Australia; 4 patients dosed at ASH Dec 2025	Second regulatory clearance; enabled first US multi-centre trial
9 Aug 2026	RXIM002	RiboX	Chinese investigator-initiated trial data	Accelerated dose-titration and subcutaneous formulation [D]
14 Sep 2026	VV169	Vyriad	Not disclosed [?]	Phase 1 opened at Mayo Clinic
16 Sep 2026	IASO208	IASO Bio	Chinese IIT, 11 patients dosed	Direct entry to Phase 1b , skipping a US Phase 1

Why this is a signal and not a news roundup

Each of these was reported as one company's good news. Read together they describe an agency posture, and the clearest statement of that posture comes from a sponsor rather than from the regulator. In its own release, IASO Bio's founder and CEO said the clearance based on early Chinese IIT data reflects the regulator's recognition of the quality of Chinese IIT data, and lays a foundation for international development of the platform's pipeline [V — [primary source, 16 Sep 2026](#)].

That is a company publicly characterising an FDA decision as a precedent about foreign data. Whether the FDA would accept that characterisation is unknown [?] — the agency does not publish IND clearance rationales, and an IND clearance is a permission to proceed, not an endorsement of a dataset.

What actually shifted

The conventional sequence for a China-originated cell therapy entering the US is: run a domestic IIT, then repeat a Phase 1 in US patients, then proceed. That repetition costs roughly two to three years [E]. In the IASO208 case it appears to have been removed. In the RiboX case the agency additionally accepted a changed route of administration and a compressed dose-escalation design [D].

The commercial consequence, stated plainly: the gap between a Chinese or Australian first-in-human dataset and a US registrational path has narrowed from years to months for this modality. Every valuation, licensing model and competitive timeline built on the old gap is now carrying an error.

Confidence: Medium-High on the pattern, Low on the cause. Four data points is a thin base for asserting policy. Plausible alternatives: modality-specific reasoning about vectors that do not require lymphodepletion; the FDA's existing gene-therapy and RMAT pathways being applied consistently rather than newly; or simple coincidence in the timing of four independent sponsor filings. Section 11 sets the tests that separate these.

7. Signal layer 4 — Patents

The IP position is the weakest of the four layers, and that weakness is itself the signal: acquirers paid platform prices into a landscape that patent analysts describe as underdeveloped.

The specific claims that matter are not the CAR constructs — those are well covered by a decade of *ex vivo* filings — but the **delivery** inventions: which ligand is conjugated to the nanoparticle surface, which ionizable lipid, which viral envelope, which RNA topology.

Filing	Assignee	Claim substance
WO-2023220708-A1	Umoja Biopharma	LNP compositions bearing anti-CD3 or anti-CD8 targeting ligands to transfect T lymphocytes <i>in vivo</i>
WO2026129142A1	Westlake Laboratory of Life Sciences and Biomedicine	LNP composition/ratio tuned for low toxicity and T-cell ligand recognition; filed Dec 2024, published 25 Jun 2026
Pending CN filing	West China Hospital, Sichuan University	Antibody-conjugated LNPs encapsulating retroviral vectors for targeted <i>in vivo</i> delivery

The analyst finding worth repeating: a commercial patent-landscape review concluded that IP covering *in vivo* CAR-T **generation methods** is underdeveloped relative to *ex vivo* approaches, with several of the most relevant filings still pending Chinese applications [D — [PatSnap](#), commercial vendor, single source, not independently confirmed].

Two implications:

1. **Freedom-to-operate is unresolved in the exact layer everyone is buying.** Five acquirers have paid platform multiples for delivery technology whose foundational claims are, in part, still prosecuting. Anyone modelling exclusivity for these assets is modelling something that does not yet exist.
2. **Whitespace is still open [E].** Underdeveloped IP in a field with up to \$14 bn of committed capital is not a stable condition. Expect filing volume on targeted-LNP and envelope-engineering claims to rise sharply, and expect the first interference or opposition activity to follow.

Confidence: Low-Medium. This layer rests on vendor-published landscape analyses rather than on a systematic search of EPO, USPTO and WIPO records, which this report did not perform. It is the weakest section here and should be treated as a

direction to investigate, not a conclusion. A proper freedom-to-operate assessment is a specialist legal exercise and is outside the scope of an OSINT landscape.

8. Synthesis

Each layer on its own supports a modest, already-published claim. Read in sequence they describe a mechanism.

Registries fill (China + Australia IITs) → Platforms proven enough to price → Up to \$14.4 bn of deals (Mar 2025 – Apr 2026) → Acquirers need a US route → FDA accepts offshore data → Timeline compresses by 2–3 years

The sequence reads as follows. Permissive first-in-human jurisdictions generated the early datasets. Those datasets were good enough to price, so five acquirers, in six deals, bought the delivery platforms rather than the molecules. Having paid platform multiples, those acquirers needed a route into the US that did not restart the clock. Between August and September 2026 the FDA cleared three INDs on exactly that basis. The offshore data became the US on-ramp.

What each layer contributes that the others cannot:

Layer	What it uniquely reveals	Lead time
Registry	Who is actually dosing patients, where, and when a programme stops	Earliest — months to years ahead of publication
Deals	What sophisticated buyers believe, priced	Concurrent, but reveals conviction
Regulatory	Whether the path is open, which sets the timetable	The binding constraint
Patents	Whether the position is defensible once it works	Longest-dated

The insight is in the joins, not the nodes. Anyone can read that Lilly bought Kelonia. The finding only appears when the deal layer is placed against the geography of the registry layer and then against the dates of the regulatory layer. That is what Clarivate means by synthesis, and it is the part that cannot be automated away — a pipeline produces candidates, a person decides which joins are real.

The falsifiable core of this report, in one sentence: *the FDA's acceptance of small offshore in vivo CAR-T datasets as a basis for advanced US trial entry is a durable shift rather than a coincidence of four filings.* Section 11 says how to score that.

9. Worked example — one registry field

To show concretely what a registry field can and cannot tell you, here is one free record, read against its full version history.

Record: [NCT06691685](#) — ESO-T01 in relapsed/refractory multiple myeloma, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology.

Field	Value
Overall status	SUSPENDED
Why stopped	<i>The collaborator EsoBiotec was acquired by AstraZeneca.</i>
Start date	18 November 2024 (actual)
Status verified	July 2026

The sponsor wrote the commercial cause of the suspension into a public database field, in plain language, for anyone to read.

The chain that field anchors [V]:

1. Trial registered November 2024, planned enrolment about 24 patients.
2. AstraZeneca announced the acquisition 18 March 2025 (\$425 m upfront, up to \$1 bn); completed 20 May 2025.
3. Enrolment stops at five patients — roughly one fifth of plan.
4. March 2026: the Nature Medicine paper appears. Four of five patients responded, three stringent complete remissions; every patient had a grade 3+ adverse event; one died 19 days after infusion.
5. 20 July 2026 (record version 4): the status moves to SUSPENDED, reason given as the acquisition. Version 3, submitted 20 March 2025 — two days after the announcement — still showed RECRUITING [V, ClinicalTrials.gov record history].

Read in date order, the record did not lead the journal; it lagged it. The status field read RECRUITING for about sixteen months after the acquisition was announced, and changed to SUSPENDED four months after the dataset was published. What the field adds is the cause: the paper reports five patients; the registry says why there were only five. For any registry product, the status field is a lagging, self-reported signal. Its value comes from reading it against the deal and publication layers, not on its own.

Note on parties [V]: the registry lists Shenzhen Pregene Biopharma as collaborator; the "why stopped" text names EsoBiotec, which AstraZeneca acquired.

A discrepancy worth flagging, because it is the kind of thing that embarrasses an analyst who does not check. A second ESO-T01 record, [NCT06791681](#) (Tongji Hospital), still showed status RECRUITING with a status-verified date of November 2024 and a last update in February 2025. Two records for the same asset, telling different stories, one of them stale by roughly eighteen months.

This is the standing caveat on all registry intelligence: **a status field reports what the sponsor last submitted, not what is happening.** Absence of an update is not evidence of activity. Any product built on this data has to treat staleness as a first-class signal in its own right, and say so to the client.

10. Counter-signals

A landscape with no disconfirming evidence usually means the analyst read only the announcements. Four things in the public record cut against the optimistic reading.

1. The first published oncology dataset was hard reading

The *Nature Medicine* ESO-T01 paper (25 March 2026), five heavily pretreated myeloma patients [V]:

- **All five** had grade 3 or higher adverse events.
- Cytokine release syndrome in four, reaching grade 3 in three.
- The first patient dosed had a hyperacute inflammatory reaction, forcing a mid-trial protocol change to add prophylactic steroids.
- One patient developed grade 1 ICANS and **died 19 days after infusion**, from spinal cord compression related to an extramedullary lesion. The authors attributed the death to pre-existing disease and called for anatomical risk stratification before dosing.

Efficacy was real — four of five responded, three stringent complete remissions, all evaluable responders MRD-negative at day 60. But *in vivo* delivery did not, in this dataset, escape the toxicity profile that defines conventional CAR-T, even without lymphodepleting chemotherapy. One trade analysis put it bluntly: the safety and efficacy profile had not separated the candidate from traditional CAR-T [D].

2. The autoimmune and oncology safety pictures diverge sharply

JY231 in neurologic autoimmune disease: no ICANS, no grade 2+ CRS, reversible cytopenias. ESO-T01 in myeloma: universal grade 3+ events and a death. **n = 16 and n = 5**. Neither cohort can carry the weight of a modality-level safety conclusion, and the honest position is that the safety profile of *in vivo* CAR-T is currently unknown outside two tiny, very different populations [E].

3. Small-n foreign data cuts both ways

The same regulatory flexibility that is the finding of this report is also its largest risk. An IND cleared on eleven patients is an IND cleared on eleven patients. If a serious adverse event emerges in a US trial that began on that basis, the plausible response is a tightening — clinical holds, demands for domestic replication — that would reverse the compression described in Section 6 faster than it arrived.

4. Trial infrastructure may be the real constraint

At least one commentator argues the binding limit for *in vivo* CAR-T in CNS autoimmune disease is not biology but the absence of trial infrastructure able to generate FDA-acceptable evidence at scale — sites with neuroradiology capable of distinguishing disease progression from treatment-related inflammation, in indications with small patient pools [D, opinion piece, one author]. It is an argument, not a

finding, but it is the most substantive published objection and it does not depend on doubting the science.

Net position. The regulatory shift is well evidenced. The clinical case rests on roughly 40 dosed patients across all published *in vivo* CAR-T cohorts. Anyone presenting this modality as de-risked is overselling it, and the counter-evidence above is the reason.

11. Falsifiable forecasts

These are stated so they can be marked right or wrong on a date, by anyone, using free sources. No forecast below is hedged to the point of being unscorable.

#	Forecast	Resolve by	Confidence	How to score it
F1	At least two further FDA IND clearances for <i>in vivo</i> CAR-T assets whose primary evidence base is a non-US investigator-initiated trial	31 Mar 2027	70%	Sponsor press releases; count clearances meeting the criterion
F2	At least one <i>in vivo</i> CAR-T programme is placed on FDA clinical hold, or suspended for safety	31 Dec 2027	55%	ClinicalTrials.gov status changes; company disclosure
F3	No <i>in vivo</i> CAR-T therapy receives FDA marketing approval	31 Dec 2028	85%	FDA approvals list
F4	The next three large-cap entries into the field are licensing deals or collaborations, not outright acquisitions	31 Dec 2027	60%	Deal announcements; test of the exhaustion thesis in §5
F5	A published randomised or controlled <i>in vivo</i> CAR-T trial in an autoimmune indication begins enrolling	31 Dec 2027	50%	Registry record with a control arm
F6	Cumulative disclosed <i>in vivo</i> cell therapy deal value exceeds \$18 bn	31 Dec 2027	45%	Sum of announced transactions, same basis as §5

What would falsify the central thesis

The thesis in Section 6 is that offshore small-n data has become an accepted US on-ramp for this modality. It is **wrong** if any of the following hold by 31 March 2027:

- F1 resolves at zero — no further clearances on that basis, suggesting three coincidental filings rather than a posture.
- The FDA publicly requires domestic replication for one of the cleared programmes before Phase 2.

- IASO208 or RXIM002 fails to open its US study on the terms announced, indicating the clearance was narrower than the sponsor's characterisation.

Scoring commitment. These forecasts should be reviewed on the dates given and the hit rate published, whether or not it flatters the analysis. A prospective claim that is never scored is marketing, not intelligence — and publishing the score is the only part of this method that competitors cannot copy cheaply.

12. Limits, open questions and sources

What this report does not establish

- **The FDA's reasoning.** The agency publishes no rationale for IND clearances. The pattern in Section 6 is observed; the intent behind it is inferred and may be wrong.
- **Complete trial counts.** No systematic registry query was run. "30+ registered trials worldwide" comes from a secondary source [D]. Exact counts by sponsor, phase and geography require API access and are not claimed here.
- **Patent position.** Section 7 rests on vendor landscape analyses, not on a systematic EPO/USPTO/WIPO search.
- **Anything about efficacy.** Roughly 40 patients have been dosed across all published cohorts. Nothing here supports a clinical recommendation.

Open questions

#	Question	Why it matters
Q1	What evidence base supported the Vyriad VV169 clearance? [?]	Undisclosed; would strengthen or weaken the §6 pattern materially
Q2	Why do the autoimmune and oncology safety profiles diverge so sharply?	Decides whether the modality is broadly safe or indication-dependent
Q3	Is the second ESO-T01 record (NCT06791681) genuinely active, or stale? [?]	Tests the registry-staleness caveat in §9
Q4	Who holds enforceable claims on anti-CD8 targeted LNP delivery? [?]	Determines whether platform valuations are defensible

Sources

Primary and official:

- [NEJM 2026;395:926-929 — Lentiviral In Vivo CD19 CAR T-Cell Therapy in Neurologic Autoimmune Disorders](#)
- [IASO Bio — FDA IND clearance for IASO208, 16 Sep 2026](#) (*opened in full*)
- [AstraZeneca — agreement to acquire EsoBiotec, Mar 2025](#) · [SEC Form 6-K, completion 20 May 2025](#)
- [Johnson & Johnson — Sail Biomedicines collaboration, 29 Jul 2026](#)
- ClinicalTrials.gov records: [NCT06691685](#) · [NCT06791681](#) · [NCT07333677](#) · [NCT06689917](#)

Secondary (trade press and analyst):

- [Fierce Biotech — ESO-T01 dataset and death](#) · [Lilly–Kelonia \\$7 bn](#) · [Moderna entry](#)
- [BioSpace — Lilly, AbbVie and the safety hurdle](#)
- [Clinical Trials Arena — safety signals, ESO-T01](#) · [PharmaVoice — deal table](#)
- [Clinical Trial Vanguard — RiboX IND](#) · [trial-design objection](#)
- [William Blair — in vivo CAR-T landscape](#) · [Alacrita — cell therapy financing](#)
- [PatSnap — LNP landscape](#) · [in vivo CAR-T IP](#)
- [Clarivate — the competitive signals framework](#) (*indexed extract only; site blocks automated access*)

Every source above is free to access. No subscription database was used. That is the point of the exercise: the barrier to this analysis was never access to data.

Prepared by TransitionConsulting Research. This is a modality-level intelligence landscape, not investment, legal or clinical advice. Figures and registry statuses are as of 17 September 2026 and will drift.

Next step

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