TROY TECHNICAL

iPS & REGENERATIVE MEDICINE

WEEKLY REPORT

November 14 - November 20, 2026 | Issue 2026-W46

Clinical evidence, manufacturability, reimbursement and scalable quality

13	10
ANALYZED ARTICLES	PRIORITY THEMES

Issued 2026-11-20 | English edition | fixed approved cover artwork



iPS & Regenerative Medicine: the boundary moved from isolated claims to qualification evidence

13 English articles were reviewed independently from the Japanese edition. Ten themes are retained for management decisions.

SIGNAL 01 | CELL SOURCE

iPS Cell Spinal Cord Therapy: Keio University Clinical Results

Keio University has completed a world-first clinical study transplanting iPS cell-derived neural cells into four patients with severe spinal cord injuries, reporting no serious side effects or tumor formation over four years.

SIGNAL 02 | PROCESS & MATERIALS

TNNI3 Variant Phenotypes: iPSC-CM Platform for Disease Severity

Researchers developed a high-throughput human induced pluripotent stem-cell (iPSC) platform to assess the impact of TNNI3 variants on cardiac function.

SIGNAL 03 | QUALITY CONTROL

Single-AAV Base Editing: Correcting MYBPC3 Mutations in HCM

Researchers developed a single-AAV vector approach for cardiomyocyte-specific adenine base editing to correct the MYBPC3 (c.2827C>T, p.Arg943Ter) mutation associated with hypertrophic cardiomyopathy.

SIGNAL 04 | CLINICAL USE

PSC-derived EVs: Immune modulation for diabetes therapy 2026

Pluripotent stem cell-derived extracellular vesicles (PSC EVs) outperform mesenchymal stem cell-derived EVs in suppressing proinflammatory cytokines and inducing regulatory T cells.

DECISION

Focus this week's management attention on clinical evidence, manufacturability, reimbursement and scalable quality. Move only when the linked evidence can be reproduced under your own operating conditions.

THREE MANAGEMENT MOVES

1. Buyers: separate research findings from clinical readiness and define release, safety and follow-up gates.
2. Suppliers: connect materials, equipment and assays to repeatable cell quality and regulatory evidence.
3. Executives: track patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EVIDENCE DISCIPLINE

FACT states what the collected English source reports. BUSINESS READ and ACTION are editorial interpretations. UNKNOWN lists information that the source file does not establish. A linked article is not treated as independent confirmation of every claim.

Numbers and evidence anchors that require conditions

68%
A12

SOURCE-BOUND CONDITION
Cretostimogene grenadenorepvec reduced the risk of bladder cancer recurrence by 68% compared to surveillance in a Phase 3 trial.

54%
A11

SOURCE-BOUND CONDITION
A GoCART coalition study found that the 2-year Leukemia-Free Survival (LFS) for B-cell acute lymphoblastic leukemia (B-ALL) patients receiving hematopoietic stem cell transplantation (HSCT) after CAR19 T-cell therapy was.

36 g
A03

SOURCE-BOUND CONDITION
By integrating single-cell transcriptomics and CRISPR screening across 261 lines, the study identified 36 genes influencing microglial phenotypes and 79 colocalizations across four neurodegenerative disease GWAS.

HOW TO USE THESE NUMBERS
Each value is shown with the condition stated in the collected English article. Do not compare values across different test methods, device sizes, operating temperatures or commercial stages without normalizing those conditions.

Where the value chain moved

Each stage combines one leading theme and one supporting theme. The report treats handoffs as evidence transfers, not decorative arrows.

1

Cell source

P01/P06

Keio University has completed a world-first clinical study transplanting iPS cell-derived neural cells into four patients.

2

Process & materials

P02/P07

Researchers developed a high-throughput human induced pluripotent stem-cell (iPSC) platform to assess the impact of TNNI3.

3

Quality control

P03/P08

Researchers developed a single-AAV vector approach for cardiomyocyte-specific adenine base editing to correct the MYBPC3.

4

Clinical use

P04/P09

Pluripotent stem cell-derived extracellular vesicles (PSC EVs) outperform mesenchymal stem cell-derived EVs in suppressing.

5

Access & scale

P05/P10

Cretostimogene grenadenorepvec reduced the risk of bladder cancer recurrence by 68% compared to surveillance in a Phase 3.

EVIDENCE REQUIRED AT EACH HANDOFF

Cell source to Process & materials	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.
Process & materials to Quality control	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.
Quality control to Clinical use	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.
Clinical use to Access & scale	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

COMMON CONTROL POINT

No theme moves to a commercial commitment until a named owner has reproduced the relevant evidence and documented patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

Priority map: maturity and next decision locus



P01	iPS Cell Spinal Cord Therapy: Keio University Clinical Results System / adoption | cue: Clinical
P02	TNNI3 Variant Phenotypes: iPSC-CM Platform for Disease Severity System / adoption | cue: Platform
P03	Single-AAV Base Editing: Correcting MYBPC3 Mutations in HCM Tech / process | cue: no system/business cue
P04	PSC-derived EVs: Immune modulation for diabetes therapy 2026 Business / rules | cue: regulatory
P05	Cretostimogene: Phase 3 PIVOT-006 Results for NMIBC Recurrence System / adoption | cue: Phase 3
P06	eCRISPR-A: Enhancer-targeted CRISPR activation for ASD rescue Tech / process | cue: no system/business cue
P07	CD19 CAR T-cell therapy and HSCT: B-ALL outcomes in 112 patients Tech / process | cue: no system/business cue
P08	Lonvoguran Ziclumeran: Intellia's In Vivo CRISPR FDA Timeline Business / rules | cue: FDA
P09	CD19-CAR T-cell Therapy: Impact on Host-Microbiota Immune Axis Tech / process | cue: no system/business cue
P10	iMGL Framework: Genetic Drivers of Neurodegenerative Risk in 261 iPSC Lines System / adoption | cue: integrating

REPRODUCIBLE POSITIONING RULE

Horizontal position uses five discrete stages: Research, Prototype, Joint evaluation, Product adoption and Scale. The vertical bands classify the next decision locus: Tech / process, System / adoption, or Business / rules (including supply systems). Article-title cues take precedence; the overview is used only when the title is silent. These are categories, not impact ranks. Bubble diameter reflects the editorial score.

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P01 iPS Cell Spinal Cord Therapy: Keio University Clinical Results

A09 | Cell source | Research

2026-11-19

FACT

Keio University has completed a world-first clinical study transplanting iPS cell-derived neural cells into four patients with severe spinal cord injuries, reporting no serious side effects or tumor formation over four years. Two patients showed motor function improvement, with one regaining the ability to walk, suggesting a potential path toward domestic regulatory approval.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P01.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 21/25 | MATURITY 1/5 | DECISION LOCUS: SYSTEM / ADOPTION

P02 TNNI3 Variant Phenotypes: iPSC-CM Platform for Disease Severity

A06 | Process & materials | Pilot

Prior release 2026-11-13

FACT

Researchers developed a high-throughput human induced pluripotent stem-cell (iPSC) platform to assess the impact of TNNI3 variants on cardiac function. The study found that in vitro diastolic function correlates with age at onset (R2 = 0.6), providing a metric for disease severity in patients.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P02.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 20/25 | MATURITY 2/5 | DECISION LOCUS: SYSTEM / ADOPTION

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P03 Single-AAV Base Editing: Correcting MYBPC3 Mutations in HCM

A05 | Quality control | Pilot

Prior release 2026-11-13

FACT

Researchers developed a single-AAV vector approach for cardiomyocyte-specific adenine base editing to correct the MYBPC3 (c.2827C>T, p.Arg943Ter) mutation associated with hypertrophic cardiomyopathy. The method achieved therapeutic correction in mouse models at doses 20-fold lower than previous dual-AAV approaches, reducing potential toxicity and manufacturing costs.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P03.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 20/25 | MATURITY 2/5 | DECISION LOCUS: TECH / PROCESS

P04 PSC-derived EVs: Immune modulation for diabetes therapy 2026

A01 | Clinical use | Research

2026-11-18

FACT

Pluripotent stem cell-derived extracellular vesicles (PSC EVs) outperform mesenchymal stem cell-derived EVs in suppressing proinflammatory cytokines and inducing regulatory T cells. In an antigen-specific type 1 diabetes model, local delivery via a biomaterial scaffold improved diabetes-free survival and preserved β-cell mass. This establishes a scalable immunomodulatory platform for autoimmune diseases and cell therapy.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P04.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 20/25 | MATURITY 1/5 | DECISION LOCUS: BUSINESS / RULES

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P05 Cretostimogene: Phase 3 PIVOT-006 Results for NMIBC Recurrence

A12 | Access & scale | Joint evaluation

2026-11-17

FACT

Cretostimogene grenadenorepvec reduced the risk of bladder cancer recurrence by 68% compared to surveillance in a Phase 3 trial. The treatment demonstrated a hazard ratio of 0.32 with no Grade 3 or higher treatment-related adverse events. This provides a potential adjuvant option for intermediate-risk and selected high-grade Ta non-muscle-invasive bladder cancer (NMIBC) patients.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P05.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 20/25 | MATURITY 3/5 | DECISION LOCUS: SYSTEM / ADOPTION

P06 eCRISPR-A: Enhancer-targeted CRISPR activation for ASD rescue

A07 | Cell source | Product adoption

Prior release 2026-11-13

FACT

Researchers used enhancer-targeted CRISPR activation (eCRISPR-A) to rescue haploinsufficiency and mutant phenotypes in human organoid models of autism. By targeting enhancers of CHD8 and SCN2A, the team achieved sustained increases in gene expression and corrected associated physiological and cellular defects. This approach suggests a viable therapeutic strategy for neurodevelopmental disorders sensitive to gene dosage.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P06.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 19/25 | MATURITY 4/5 | DECISION LOCUS: TECH / PROCESS

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P07 CD19 CAR T-cell therapy and HSCT: B-ALL outcomes in 112 patients

A11 | Process & materials | Research

2026-11-19

FACT

A GoCART coalition study found that the 2-year Leukemia-Free Survival (LFS) for B-cell acute lymphoblastic leukemia (B-ALL) patients receiving hematopoietic stem cell transplantation (HSCT) after CAR19 T-cell therapy was 54%. Outcomes varied significantly by timing, with pre-emptive and consolidative HSCT showing higher LFS than rescue HSCT. These results highlight the necessity of identifying high-risk patients to optimize transplant strategies.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P07.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 19/25 | MATURITY 1/5 | DECISION LOCUS: TECH / PROCESS

P08 Lonvoguran Ziclumeran: Intellia's In Vivo CRISPR FDA Timeline

A04 | Quality control | Research

Prior release 2026-11-12

FACT

Intellia Therapeutics has applied for FDA approval of lonvoguran ziclumeran (lonvo-z), a CRISPR-Cas9 therapy that edits genes directly inside the body. Data shows the treatment remains effective four years post-administration, potentially eliminating the need for lifelong medication for hereditary angioedema.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P08.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 19/25 | MATURITY 1/5 | DECISION LOCUS: BUSINESS / RULES

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P09 CD19-CAR T-cell Therapy: Impact on Host-Microbiota Immune Axis

A10 | Clinical use | Research

Prior release 2026-11-12

FACT

CD19-CAR T-cell therapy reshapes microbiota-directed humoral immunity and gut microbial composition in patients with autoimmune diseases. The study identifies that baseline fecal IgA levels correlate with B-cell reconstitution speed and that specific protein-protein interactions are associated with subsequent relapse.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P09.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 19/25 | MATURITY 1/5 | DECISION LOCUS: TECH / PROCESS

P10 iMGL Framework: Genetic Drivers of Neurodegenerative Risk in 261 iPSC Lines

A03 | Access & scale | Pilot

2026-11-17

FACT

Researchers developed a pooled human induced pluripotent stem cell-derived microglia (iMGL) framework to link genetic variants to cellular phenotypes. By integrating single-cell transcriptomics and CRISPR screening across 261 lines, the study identified 36 genes influencing microglial phenotypes and 79 colocalizations across four neurodegenerative disease GWAS.

WHY IT MATTERS

The decision relevance is clinical evidence, manufacturability, reimbursement and scalable quality. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, connect materials, equipment and assays to repeatable cell quality and regulatory evidence.

ACTION

Within 30 days, separate research findings from clinical readiness and define release, safety and follow-up gates; record the evidence and owner against P10.

UNKNOWN

Still unproven or incompletely stated: patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.

EDITORIAL SCORE 19/25 | MATURITY 2/5 | DECISION LOCUS: SYSTEM / ADOPTION

Playbook and 0-5 year roadmap

STAKEHOLDER	NOW | 0-30 DAYS	NEXT | 1-12 MONTHS	LATER | 1-5 YEARS
Operating companies	separate research findings from clinical readiness and define release, safety and follow-up gates	Run production-like qualification with explicit acceptance and stop criteria.	Build a portfolio and architecture that can absorb technology and supplier changes.
Materials, equipment and technology suppliers	connect materials, equipment and assays to repeatable cell quality and regulatory evidence	Create shared reliability, process-window and failure-analysis data with customers.	Standardize interfaces, traceability, lifecycle support and recovery services.
Trading, investment and legal teams	Map patient count, endpoints, comparators, adverse events, CMC consistency and reimbursement.	Contract for capacity, quality, change notice, liability, alternatives and exit.	Diversify regional, technical and customer concentration risk.

ROADMAP

NOW | 0-30 DAYS
Evidence ledger
Owner: Strategy + quality
Deliverable: claim, source, condition, owner

NOW | 0-30 DAYS
Risk screen
Owner: Procurement + legal
Deliverable: unknowns, alternatives, stop

NEXT | 1-12 MONTHS
Joint qualification
Owner: R&D + supplier
Deliverable: process window and failure data

NEXT | 1-12 MONTHS
Commercial gate
Owner: Business + finance
Deliverable: unit economics and capacity

LATER | 1-5 YEARS
Platform strategy
Owner: Executive team
Deliverable: portfolio and interface roadmap

LATER | 1-5 YEARS
Service layer
Owner: Operations + channel
Deliverable: monitoring, maintenance and recovery

GO / NO-GO GATES

GATE	OWNER	REQUIRED EVIDENCE	NO-GO CONDITION
G1 Evidence	**Quality**	Source, test conditions and reproducibility	No traceable evidence
G2 Integration	**R&D**	Interface, process window and failure analysis	Cannot meet system conditions
G3 Commercial	**Business**	Capacity, total cost, contract and alternatives	Economics or supply cannot be supported
G4 Lifecycle	**Operations**	Monitoring, maintenance, change notice and exit	No accountable operating plan

ANALYZED ARTICLES | ITEMS 01-13

Every title and URL is displayed in full. URLs wrap without shortening and remain clickable. A verified-reference label means the translated HTML did not retain its original source URL.

ID	FULL ARTICLE TITLE	FULL SOURCE / VERIFIED REFERENCE URL - CLICKABLE
A01	PSC-derived EVs: Immune modulation for diabetes therapy 2026	https://doi.org/10.1038/s41565-026-02320-z
A02	CD19 CAR T-cell Therapy: Bridging Therapy Impact on 1,134 LBCL Patients	https://doi.org/10.1038/s41409-026-03074-x
A03	iMGL Framework: Genetic Drivers of Neurodegenerative Risk in 261 iPSC Lines	https://doi.org/10.1038/s41588-026-02843-0
A04	Lonvoguran Ziclumeran: Intellia's In Vivo CRISPR FDA Timeline	https://www.nature.com/articles/d41586-026-03705-9
A05	Single-AAV Base Editing: Correcting MYBPC3 Mutations in HCM	https://doi.org/10.64898/2026.11.12.765297
A06	TNNI3 Variant Phenotypes: iPSC-CM Platform for Disease Severity	https://doi.org/10.1038/s44161-026-00908-1
A07	eCRISPR-A: Enhancer-targeted CRISPR activation for ASD rescue	https://doi.org/10.1038/s41593-026-02504-9
A08	AAM-EVs: Mechanism of macrophage-induced liver repair in 2026	https://doi.org/10.64898/2026.11.17.767294
A09	iPS Cell Spinal Cord Therapy: Keio University Clinical Results	https://japan-forward.com/ja/ips-cell-spinal-cord-injury-keio-okano-clinical-trial/
A10	CD19-CAR T-cell Therapy: Impact on Host-Microbiota Immune Axis	https://doi.org/10.64898/2026.11.11.765834
A11	CD19 CAR T-cell therapy and HSCT: B-ALL outcomes in 112 patients	https://doi.org/10.3324/haematol.2026.301354
A12	Cretostimogene: Phase 3 PIVOT-006 Results for NMIBC Recurrence	https://oncodaily.com/not-to-miss/cretostimogene-634173
A13	BAFME Epilepsy: Antisense Oligonucleotides Reduce Neural Activity	https://www.kyoto-u.ac.jp/ja/research-news/2026-11-16-1

iPS_RegenerativeMedicine — Selected Articles

Date: 2026-11-21

Articles: 13

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#01 PSC-derived EVs: Immune modulation for diabetes therapy 2026

Published November 18, 2026 Nature Nanotechnology



OVERVIEW

Pluripotent stem cell-derived extracellular vesicles (PSC EVs) outperform mesenchymal stem cell-derived EVs in suppressing proinflammatory cytokines and inducing regulatory T cells. In an antigen-specific type 1 diabetes model, local delivery via a biomaterial scaffold improved diabetes-free survival and preserved β-cell mass. This establishes a scalable immunomodulatory platform for autoimmune diseases and cell therapy.

IN DEPTH

Key Findings

Pluripotent stem cell-derived extracellular vesicles (PSC EVs), sourced from embryonic stem cells and induced pluripotent stem cells, demonstrate superior immunomodulatory capabilities compared to mesenchymal stem cell-derived EVs. Specifically, PSC EVs are more effective at reducing T cell activation, suppressing the secretion of proinflammatory cytokines, and inducing the production of regulatory T cells.

Technical Details

PSC EVs possess distinct molecular signatures that differentiate them from mesenchymal stem cell-derived EVs. These unique components include the miR-302 family of microRNAs and pluripotency-associated proteins, namely CD133 and ROR1. To address production needs, the researchers utilized dynamic suspension culture of PSC aggregates, which provides a reproducible and scalable method to enhance EV yield.

In vivo efficacy was tested using an antigen-specific type 1 diabetes model. The study employed a biomaterial scaffold to deliver two local injections of induced PSC EVs. This approach resulted in several systemic and local improvements:

- Increased regulatory T cell populations within draining lymph nodes.
- Induction of systemic immune modulation.
- Significant improvement in diabetes-free survival.
- Preservation of β-cell mass.

Background & Context

While embryonic development is characterized by high levels of immune tolerance, it was previously unclear if this property extended to EVs derived from pluripotent stem cells. This research compares the efficacy of PSC EVs against the established use of mesenchymal stem cell-derived EVs in treating autoimmune responses.

Significance & Outlook

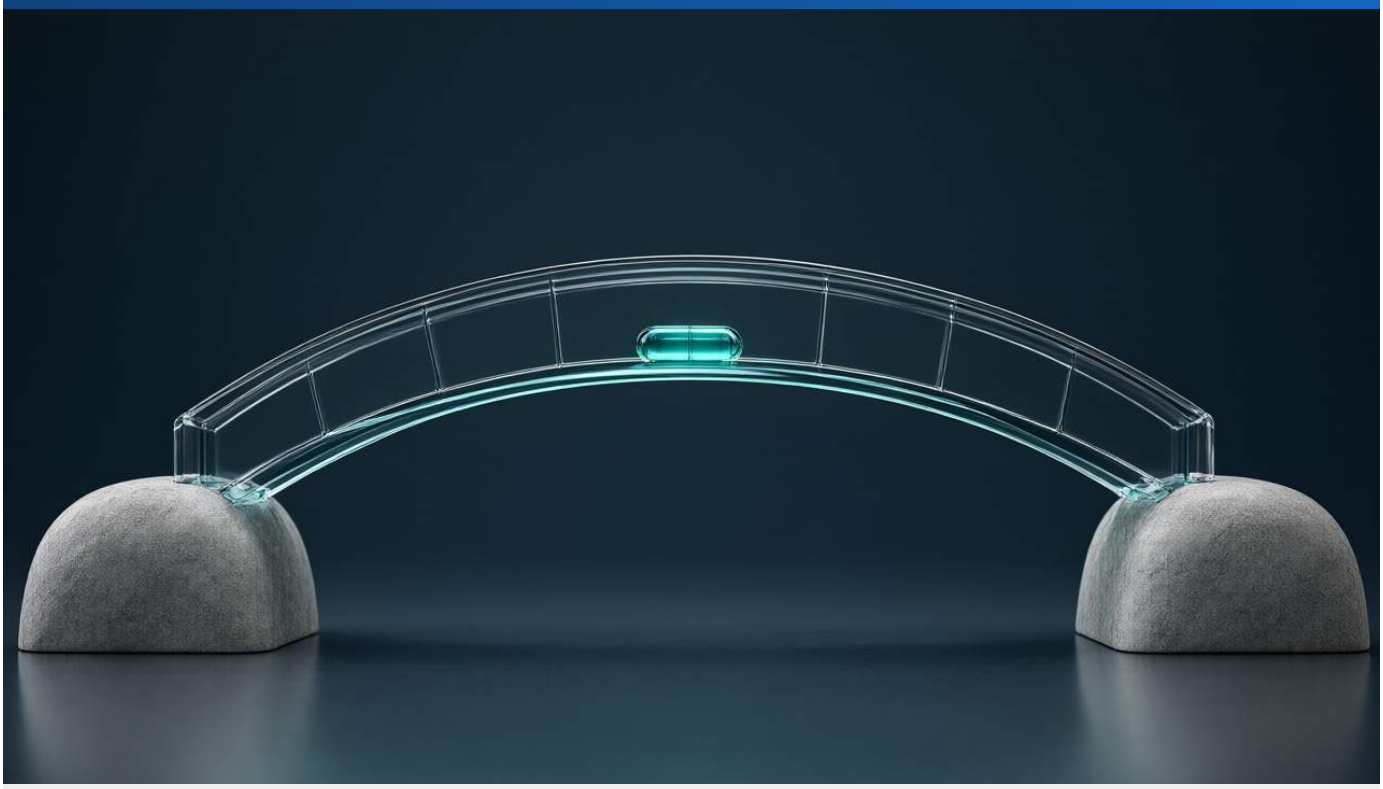
The ability to produce these vesicles through scalable suspension culture, combined with their potent immune-suppressing properties, positions PSC EVs as a viable platform for treating autoimmune diseases. Furthermore, these findings suggest a potential application for PSC EVs in enhancing immune tolerance for broader cell therapy implementations.

Source: https://doi.org/10.1038/s41565-026-02320-z

Collected: November 21, 2026 | Automated Research System (AI)

#02 CD19 CAR T-cell Therapy: Bridging Therapy Impact on 1,134 LBCL Patients

Published November 13, 2026 Bone Marrow Transplantation



OVERVIEW

Analysis of 1,134 patients with relapsed/refractory large B-cell lymphoma (R/R LBCL) shows that patients who did not receive bridging therapy (No-BT) had superior overall survival (OS) and progression-free survival (PFS). While bridging therapy (BT) improved disease status and complete remission rates at lymphodepletion, it was associated with higher-risk baseline characteristics.

IN DEPTH

Key Findings

Patients who did not receive bridging therapy (No-BT) demonstrated significantly better long-term outcomes compared to those who did. The three-year PFS was 44.7% for the No-BT group versus 34.3% for the BT group, while three-year OS was 57.4% versus 44.4%. Multivariable analyses confirmed that No-BT was associated with superior OS (HR 0.63, 95% CI 0.49–0.82) and PFS (HR 0.69, 95% CI 0.55–0.87).

Technical Details

The study analyzed 1,134 adult patients treated with axicabtagene ciloleucel or tisagenlecleucel between 2018 and July 2023. Of these, 900 patients (79.5%) received BT, while 232 (20.5%) did not. BT modalities included polatuzumab vedotin-bendamustine-rituximab (Pola-BR), low-dose regimens, classical salvage chemo-immunotherapy, or radiotherapy. At the time of lymphodepletion, BT recipients more frequently presented with bulky disease, elevated LDH, and ECOG ≥2, though they achieved higher complete remission rates.

The data indicates that improvement in disease status between apheresis and lymphodepletion was more common in the BT group and correlated with better outcomes; BT recipients with improved disease status showed a 3-year PFS of 47.5%, compared to 28.9% and 27.7% for those with stable or worsened disease.

Background & Context

CD19-directed CAR T-cell therapy is the standard of care for R/R LBCL, but the interval between leukapheresis and lymphodepletion is critical. BT is often used to prevent disease progression during this window. Previous reports have been limited by small sample sizes or a focus on specific strategies like radiotherapy. This retrospective, multicenter study by the EBMT Lymphoma Working Party and the GoCART Coalition provides a larger dataset to compare outcomes between BT and No-BT cohorts.

Significance & Outlook

The analysis suggests that while the specific BT regimen did not significantly influence adjusted OS, PFS, or relapse, the primary value of bridging therapy lies in achieving disease control with minimal toxicity rather than the choice of a specific drug regimen.

Source: https://doi.org/10.1038/s41409-026-03074-x

Collected: November 21, 2026 | Automated Research System (AI)

#03 iMGL Framework: Genetic Drivers of Neurodegenerative Risk in 261 iPSC Lines

Published November 17, 2026 Nature Genetics



OVERVIEW

Researchers developed a pooled human induced pluripotent stem cell-derived microglia (iMGL) framework to link genetic variants to cellular phenotypes. By integrating single-cell transcriptomics and CRISPR screening across 261 lines, the study identified 36 genes influencing microglial phenotypes and 79 colocalizations across four neurodegenerative disease GWAS.

IN DEPTH

Key Findings

The study identified 36 genes that influence microglial phenotypes through burden analysis of deleterious variants. Expression quantitative trait locus (eQTL) analysis revealed 7,121 eQTL-associated genes and 79 colocalizations across four neurodegenerative disease genome-wide association studies (GWAS), with half of these showing limited prior evidence of causality. Specifically, the integration of eQTL and phenotypic data highlighted that LRRK2 and TREM2 act through microglial phagocytosis, a finding further validated by a coupled CRISPR screen.

Technical Details

The framework utilized 261 human iPSC lines (247 HipSci and 14 IPMAR) differentiated into iMGLs. These were organized into 16 pools containing 16–72 lines per pool to enhance scalability and reduce differentiation variability. The researchers employed the following methodologies:

- **Phenotypic Readouts:** Assays measuring differentiation, phagocytosis, and migration.
- **Transcriptomics:** Single-cell RNA sequencing of approximately two million cells across untreated, lipopolysaccharide (LPS)-treated, and interferon-γ (IFNγ)-treated conditions to mimic inflammatory responses.
- **Analysis:** Integration of genotype information, single-cell QTL mapping, and gene-based association testing.
- **Validation:** CRISPR screens to identify the role of TREM2 in phagocytosis and determine the directionality of phenotypic effects based on cell type.

Background & Context

Microglia are critical to neurodegeneration due to their roles in neuroinflammation, synaptic pruning, and protein clearance. While GWAS have identified thousands of variants linked to complex traits, most are non-coding and their downstream cellular consequences remain cryptic. Primary human microglial material is largely inaccessible, making iPSC-derived models a scalable alternative for studying variant-to-gene-to-phenotype relationships under controlled conditions.

Significance & Outlook

This pooled iMGL framework addresses technical challenges such as donor differentiation efficiency and batch effects. By contextualizing variant effects within different inflammatory states, the research provides a comprehensive system for interpreting the function of risk loci in neurodegenerative disorders, particularly Alzheimer’s disease.

Source: https://doi.org/10.1038/s41588-026-02843-0

Collected: November 21, 2026 | Automated Research System (AI)

#04 Lonvoguran Ziclumeran: Intellia's In Vivo CRISPR FDA Timeline

Published November 12, 2026 Nature USA



OVERVIEW

Intellia Therapeutics has applied for FDA approval of lonvoguran ziclumeran (lonvo-z), a CRISPR-Cas9 therapy that edits genes directly inside the body. Data shows the treatment remains effective four years post-administration, potentially eliminating the need for lifelong medication for hereditary angioedema.

IN DEPTH

Key Findings

Intellia Therapeutics has submitted lonvoguran ziclumeran (lonvo-z) for US Food and Drug Administration (FDA) approval, with a decision expected by 10 March. If approved, lonvo-z will be the first CRISPR-based medicine delivered *in vivo* (inside the body). Clinical data released by the developer indicates that the therapy continues to be effective four years after treatment.

Technical Details

Lonvo-z is designed to treat a form of hereditary angioedema characterized by painful swelling in the throat and other body parts. The therapy utilizes the CRISPR–Cas9 system to disable the gene responsible for producing prekallikrein, a protein produced in the liver that promotes blood-vessel leakage. The delivery mechanism consists of fatty particles encasing mRNA encoding the CRISPR–Cas9 components. These particles are infused into the blood and taken up by the liver; the entire procedure takes one day.

Background & Context

Current FDA-approved CRISPR therapy, such as Casgevy for sickle-cell disease and β-thalassaemia, is performed *ex vivo*. This process requires removing blood stem cells, editing them externally, and re-infusing them after the patient undergoes harsh chemotherapy to make room for the edited cells. In contrast, *in vivo* editing sidesteps these complexities of cost and time.

However, *in vivo* approaches introduce specific safety risks, including the inability to screen out unwanted edits at other genomic locations and potential harmful immune responses. Last year, the FDA placed a clinical hold on two other Intellia *in vivo* trials after a participant with additional health conditions died from liver damage. The hold was lifted this year following the implementation of extra safety measures.

Significance & Outlook

For patients with hereditary angioedema, this gene-editing approach could replace the lifelong management of medications used to prevent and treat swelling attacks. The four-year efficacy data is described by trial investigator Jonathan Bernstein as "very reassuring" and consistent with expected outcomes.

Source: https://www.nature.com/articles/d41586-026-03705-9

Collected: November 21, 2026 | Automated Research System (AI)

#05 Single-AAV Base Editing: Correcting MYBPC3 Mutations in HCM

Published November 13, 2026 bioRxiv



OVERVIEW

Researchers developed a single-AAV vector approach for cardiomyocyte-specific adenine base editing to correct the MYBPC3 (c.2827C>T, p.Arg943Ter) mutation associated with hypertrophic cardiomyopathy. The method achieved therapeutic correction in mouse models at doses 20-fold lower than previous dual-AAV approaches, reducing potential toxicity and manufacturing costs.

IN DEPTH

Key Findings

The study demonstrates that a single-vector adenine base editing system can effectively correct a Dutch founder mutation in the MYBPC3 gene (c.2827C>T, p.Arg943Ter) that causes hypertrophic cardiomyopathy (HCM). In a mouse model of HCM, this single-AAV approach achieved therapeutic correction using doses 20-fold lower than those required by previously published dual-AAV base editing strategies.

Technical Details

To overcome the size limitations of canonical SpCas9-based editors, which are too large for a single AAV vector, the researchers implemented the following technical optimizations:

- **Editor Selection:** Compact base editors were screened in human induced pluripotent stem cell-derived cardiomyocytes (hiPSC-CMs) to identify the most efficient configuration. This configuration successfully reversed disease-associated hypercontractility in engineered human myocardium (EHM).
- **Promoter Engineering:** The team screened a library of rationally designed small chimeric promoters to fit the editor and guide construct into one vector. They identified a promoter, 6C2, which drives expression with high specificity in hiPSC-CMs and cardiac tissue across mice and non-human primates (NHP).
- **Delivery Mechanism:** The system was delivered using a single next-generation cardiotropic AAV capsid.

Background & Context

Hypertrophic cardiomyopathy is the most common inherited cardiac disorder, often leading to cardiac hypercontractility, diastolic dysfunction, heart failure, and sudden cardiac death. It is primarily caused by pathogenic variants in genes encoding sarcomeric proteins. While current therapies focus on symptom management, AAV-based base editing targets the underlying genetic cause. Previous dual-AAV methods required higher overall vector doses, increasing manufacturing costs and the risk of toxicity.

Significance & Outlook

By reducing the required vector dose and utilizing a single-vector system with cardiomyocyte-specific expression, this approach establishes a more viable therapeutic strategy for inherited cardiomyopathies. The results indicate that the combination of compact editors and small chimeric promoters like 6C2 can effectively deliver genetic corrections to cardiac tissue in vivo.

Source: https://doi.org/10.64898/2026.11.12.765297

Collected: November 21, 2026 | Automated Research System (AI)

#06 TNNI3 Variant Phenotypes: iPSC-CM Platform for Disease Severity

Published November 13, 2026 Nature Cardiovascular Research USA



OVERVIEW

Researchers developed a high-throughput human induced pluripotent stem-cell (iPSC) platform to assess the impact of TNNI3 variants on cardiac function. The study found that in vitro diastolic function correlates with age at onset ($R^2 = 0.6$), providing a metric for disease severity in patients.

IN DEPTH

Key Findings

The study establishes a high-throughput human iPSC-cardiomyocyte platform capable of distinguishing pathogenic from nonpathogenic TNNI3 variants. By integrating measurements of contractility and calcium signaling, the researchers characterized the pathogenic effects of variants of uncertain significance. Notably, the analysis of patients from a single site revealed that in vitro diastolic function correlates with the age at onset of the disease, with a coefficient of determination (R^2) of 0.6.

Technical Details

The platform measures the effects of variants in cardiac troponin I (encoded by the TNNI3 gene) across several physiological parameters:

- Systolic force generation
- Diastolic force generation
- Calcium handling

The research utilized MATLAB v.2024a and R v.4.4.2 for data processing. Analysis scripts for contractility, calcium signaling, and R-based calculations were made available via Zenodo.

Background & Context

Routine genetic testing for cardiomyopathy frequently identifies causative genetic variants; however, the specific impact of these variants on clinical outcomes and physiological function often remains unclear. TNNI3 is a critical component of the cardiac sarcomere, and mutations in this gene are linked to cardiomyopathy. This research addresses the gap between the identification of a genetic variant and the understanding of its actual functional consequence in a human cellular model.

Significance & Outlook

The ability to comprehensively characterize in vitro variant effects that correlate with clinical outcomes allows for a better understanding of the mechanisms underlying variable disease severity. This platform provides a framework for enhancing the discovery of class-targeted treatments by linking cellular phenotypes directly to patient-level severity markers, such as age at onset.

Source: https://doi.org/10.1038/s44161-026-00908-1

Collected: November 21, 2026 | Automated Research System (AI)

#07 eCRISPR-A: Enhancer-targeted CRISPR activation for ASD rescue

Published November 13, 2026 Nature Neuroscience USA



OVERVIEW

Researchers used enhancer-targeted CRISPR activation (eCRISPR-A) to rescue haploinsufficiency and mutant phenotypes in human organoid models of autism. By targeting enhancers of CHD8 and SCN2A, the team achieved sustained increases in gene expression and corrected associated physiological and cellular defects. This approach suggests a viable therapeutic strategy for neurodevelopmental disorders sensitive to gene dosage.

IN DEPTH

Key Findings

Enhancer-targeted CRISPR activation (eCRISPR-A) successfully rescued gene expression levels and mutation-associated phenotypes in human pluripotent stem cell (hPSC)-derived excitatory neurons and cerebral forebrain organoids (hCOs). The study specifically demonstrated that eCRISPR-A induced a sustained increase in the expression of CHD8 and SCN2A in mutant cells, correcting both gene expression and physiology.

Technical Details

The researchers focused on two high-confidence autism spectrum disorder (ASD) risk genes: CHD8 and SCN2A. To model haploinsufficiency, the team used CRISPR to create heterozygous knockouts in an embryonic stem cell line (HUES66) and an induced pluripotent stem cell line (KOLF 2.2J). In CHD8-mutant lines, mRNA and protein levels were reduced by approximately 50%.

To address the risks of overexpression associated with promoter-targeting CRISPR-A, the researchers targeted gene enhancers. This strategy aims to preserve cell-type-specific expression and align more closely with endogenous gene regulation across developmental time. The study utilized NGN2 induction for two-dimensional excitatory neuron cultures and a specific protocol for three-dimensional hCOs to recapitulate in vivo cortical development.

Background & Context

ASD is a highly heritable condition where approximately 15% of genetic susceptibility is attributed to de novo haploinsufficient mutations. CHD8 is a transcriptional regulator that peaks during neurogenesis, while SCN2A encodes NaV1.2, a protein essential for action potentials that is expressed later in mid-fetal development. A known phenotype of CHD8 haploinsufficiency is macrocephaly; in this study, hCOs produced from CHD8 mutant lines were significantly larger than wild-type organoids at 50 days and 70 days.

Significance & Outlook

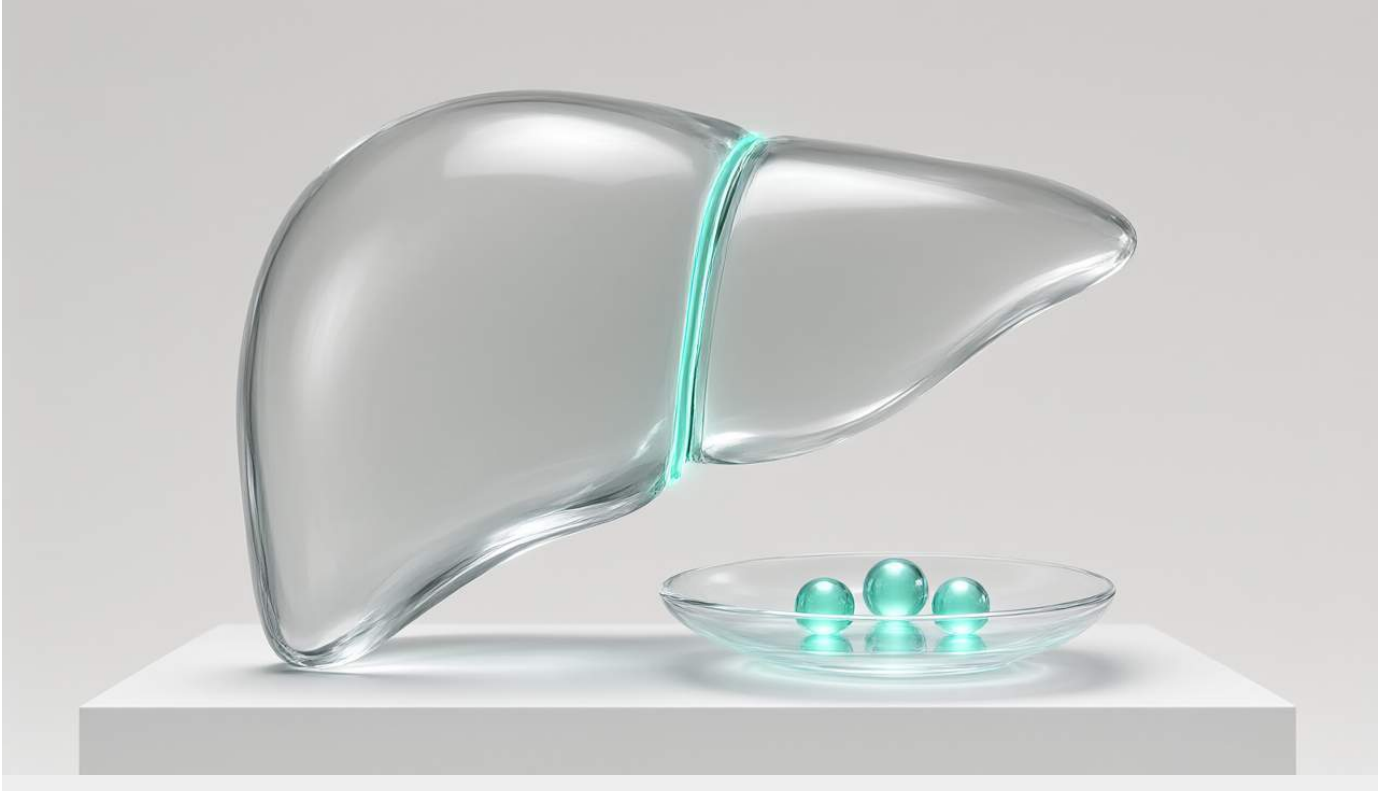
Because haploinsufficient genes are notoriously dosage-sensitive, the use of enhancer-targeted activation provides a more controlled method of upregulation than promoter-targeting. These results support the potential of eCRISPR-A as a therapeutic intervention for ASD and other neurodevelopmental disorders caused by haploinsufficiency.

Source: https://doi.org/10.1038/s41593-026-02504-9

Collected: November 21, 2026 | Automated Research System (AI)

#08 AAM-EVs: Mechanism of macrophage-induced liver repair in 2026

Published November 18, 2026 bioRxiv



OVERVIEW

Extracellular vesicles from alternatively activated macrophages (AAM-EVs) have been identified as essential mediators in remodeling the injured hepatic niche and promoting repair. These vesicles reduce necrosis and neutrophilic inflammation while promoting hepatocellular regeneration, supporting the potential for a cell-free therapeutic strategy.

IN DEPTH

Key Findings

AAM-EVs are critical drivers of the therapeutic activity associated with alternatively activated macrophages (AAMs). In models of established APAP injury, the administration of AAM-EVs reduces necrosis and neutrophilic inflammation while promoting hepatocellular regeneration. Research indicates that AAM-EVs rapidly and preferentially associate with hepatic macrophages, triggering a reparative phenotypic shift.

Technical Details

The study identifies several molecular and cellular mechanisms through which AAM-EVs operate:

- **Macrophage Modulation:** AAM-EVs enhance macrophage phagocytosis and induce reparative transcriptional and proteomic responses, specifically increasing TREM2 abundance.
- **miRNA Involvement:** EVs derived from Dicer-deficient AAMs show reduced therapeutic activity, suggesting that miRNA-associated mechanisms are central to the process.
- **Comparative Analysis:** Single-nucleus transcriptomics reveal that while AAMs and AAM-EVs produce overlapping responses in macrophages and hepatocytes, these responses remain distinct.
- **Inhibition Effects:** Pharmacological inhibition of EV release attenuates the efficacy of parent AAMs and reduces the accumulation of $TREM2^{+}$ macrophages.

Background & Context

AAMs are currently in clinical development for the treatment of acute liver injury. While it was known that AAM therapy remodels the injured hepatic niche—by suppressing inflammatory myeloid programmes and restoring hepatocyte metabolic and biosynthetic programmes—the exact mechanisms of action remained incompletely understood until the identification of these extracellular vesicles.

Significance & Outlook

The discovery that AAM-EVs can independently induce reparative states and reduce liver injury provides a mechanistic basis for the efficacy of AAM therapy. By demonstrating that the therapeutic effects are mediated by vesicles, these findings support the development of AAM-EVs as a cell-free therapeutic strategy for liver repair.

Source: https://doi.org/10.64898/2026.11.17.767294

Collected: November 21, 2026 | Automated Research System (AI)

#09 iPS Cell Spinal Cord Therapy: Keio University Clinical Results

Published November 19, 2026 JAPAN Forward Japan



OVERVIEW

Keio University has completed a world-first clinical study transplanting iPS cell-derived neural cells into four patients with severe spinal cord injuries, reporting no serious side effects or tumor formation over four years. Two patients showed motor function improvement, with one regaining the ability to walk, suggesting a potential path toward domestic regulatory approval.

IN DEPTH

Key Findings

A clinical study led by Professor Hideyuki Okano of Keio University demonstrated the safety of transplanting induced pluripotent stem (iPS) cell-derived neural cells into patients with complete spinal cord injuries. In a group of four participants, no tumor formation or severe side effects related to the transplanted cells were observed during a follow-up period of up to four years. Regarding efficacy, two of the four patients improved to grade C or higher on a five-point motor function scale (where A is complete loss and E is normal function), exceeding the historical recovery rate of approximately 12% for complete injuries. One patient recovered sufficiently to begin walking training.

Technical Details

The research team utilized "neural stem/progenitor cells" derived from iPS cells, which differentiate into neurons and supporting cells. The procedure involved injecting 2 million cells directly into the injury site between 14 and 28 days post-injury. To ensure safety, the team conducted genomic testing for cancer-related mutations and chromosomal abnormalities, and performed tumor-formation tests in immunodeficient mice. Motor function was measured using a five-point scale and a comprehensive motor score; the latter showed a median increase of 13 points after 52 weeks, compared to a 7-point increase in historical control data from the Comprehensive Spinal Cord Injury Center in Fukuoka.

Background and Context

The study focused on "complete injuries" to distinguish treatment effects from natural recovery. While animal experiments on mice and monkeys previously showed success, ethical constraints hindered human trials using fetal tissues, leading the team to adopt iPS technology developed by Professor Shinya Yamanaka. The study was conducted under the highest risk category of regenerative medicine guidelines and reviewed by a Ministry of Health, Labour and Welfare expert committee.

Significance and Outlook

Keio University and its venture company, K-Pharma, in collaboration with Nikon Cell Innovation, aim to start company-led clinical trials by 2027. Professor Okano intends to seek conditional and time-limited approval within three to four years. Future research will target chronic-phase patients with incomplete injuries and explore combining cell therapy with intensive rehabilitation. Additionally, the team is investigating the application of this technology to stroke treatment and developing oral medications for ALS.

Source: https://japan-forward.com/ja/ips-cell-spinal-cord-injury-keio-okano-clinical-trial/

Collected: November 21, 2026 | Automated Research System (AI)

#10 CD19-CAR T-cell Therapy: Impact on Host–Microbiota Immune Axis

Published November 12, 2026 bioRxiv



OVERVIEW

CD19-CAR T-cell therapy reshapes microbiota-directed humoral immunity and gut microbial composition in patients with autoimmune diseases. The study identifies that baseline fecal IgA levels correlate with B-cell reconstitution speed and that specific protein-protein interactions are associated with subsequent relapse.

IN DEPTH

Key Findings

CD19-CAR T-cell therapy induces significant changes in the host–microbiota immune axis, characterized by reduced fecal IgA and a decrease in serum anti-commensal IgA and IgG. These changes are accompanied by a selective remodeling of microbiota-reactive antibody repertoires and alterations in gut microbial composition, specifically the depletion of *Bifidobacterium adolescentis*. Notably, the therapy did not result in a uniform depletion of disease-associated pathobionts.

Technical Details

The study utilized a longitudinal profiling approach involving 20 patients diagnosed with systemic lupus erythematosus, systemic sclerosis, or idiopathic inflammatory myopathy, compared against 23 healthy controls. Researchers employed the following methodologies to analyze the immune-microbiota interface:

- Shotgun metagenomics for gut microbiome composition.
- IgA/IgG-bound microbiota profiling.
- PhIP-Seq to analyze humoral immunity.

Integrated host–microbiome analyses revealed altered predicted protein-protein interactions involving B-cell/plasma-cell pathways and the immunoproteasome. The data indicates that taxon-specific IgA targeting, rather than the global diversity of IgA/IgG-coated microbiota, differed based on whether a patient experienced a subsequent relapse.

Background & Context

While CD19-targeted CAR T-cell therapy is known to cause profound B-cell depletion and produce clinical responses in autoimmune diseases, the impact of this depletion on the interaction between the host and the gut microbiota had previously remained unknown.

Significance & Outlook

The findings establish a link between mucosal humoral immunity and the recovery of the immune system following treatment. Specifically, lower baseline fecal IgA levels were associated with delayed B-cell reconstitution. Furthermore, the identification of specific protein-protein interactions prior to CAR-T cell intervention provides a potential marker for predicting subsequent relapse in patients with these autoimmune conditions.

Source: https://doi.org/10.64898/2026.11.11.765834

Collected: November 21, 2026 | Automated Research System (AI)

#11 CD19 CAR T-cell therapy and HSCT: B-ALL outcomes in 112 patients

Published November 19, 2026 Haematologica



OVERVIEW

A GoCART coalition study found that the 2-year Leukemia-Free Survival (LFS) for B-cell acute lymphoblastic leukemia (B-ALL) patients receiving hematopoietic stem cell transplantation (HSCT) after CAR19 T-cell therapy was 54%. Outcomes varied significantly by timing, with pre-emptive and consolidative HSCT showing higher LFS than rescue HSCT. These results highlight the necessity of identifying high-risk patients to optimize transplant strategies.

IN DEPTH

Key Findings

The study reports a 2-year post-transplant Leukemia-Free Survival (LFS) of 54% and a 2-year cumulative incidence of relapse of 32% among 112 patients. A significant disparity in outcomes was observed based on age, with children achieving a better LFS (63%) compared to adults (38%). Furthermore, older age was associated with inferior LFS, with a hazard ratio (HR) of 1.30 per 10-year increase (p= 0.01).

Technical Details

Patients received HSCT at a median of 6.1 months after the CAR19 T-cell infusion. The indications for the subsequent HSCT were categorized into three groups:

- Rescue: 72 patients (64%) due to disease recurrence.
- Pre-emptive: 21 patients (19%) due to loss of B-cell aplasia.
- Consolidative: 19 patients (17%).

The timing of the transplant strongly influenced the 2-year LFS, which was 78% for consolidative HSCT and 74% for pre-emptive HSCT, compared to only 41% for rescue HSCT (p=0.002). Additionally, the use of a haploidentical donor was associated with inferior LFS (HR: 2.21, 95%CI: 1.15-4.25, p=0.02).

Background & Context

Hematopoietic stem cell transplantation (HSCT) is used as a rescue mechanism for B-cell acute lymphoblastic leukemia (B-ALL) that recurs after CD19-directed chimeric antigen receptor T-cell (CAR19 T-cell) therapy. Despite its utility, the specific indications and the optimal timing for consolidative HSCT remain controversial, particularly for patients identified as being at high risk of relapse.

Significance & Outlook

This real-world data underscores the critical need to refine the identification of patients at higher risk of relapse. By optimizing the timing and strategy of HSCT—specifically moving toward pre-emptive or consolidative rather than rescue interventions—outcomes for patients with R/R B-ALL receiving CD19-directed CAR T cells may be improved.

Source: https://doi.org/10.3324/haematol.2026.301354

Collected: November 21, 2026 | Automated Research System (AI)

#12 Cretostimogene: Phase 3 PIVOT-006 Results for NMIBC Recurrence

Published November 17, 2026 OncoDaily USA



OVERVIEW

Cretostimogene grenadenorepvec reduced the risk of bladder cancer recurrence by 68% compared to surveillance in a Phase 3 trial. The treatment demonstrated a hazard ratio of 0.32 with no Grade 3 or higher treatment-related adverse events. This provides a potential adjuvant option for intermediate-risk and selected high-grade Ta non-muscle-invasive bladder cancer (NMIBC) patients.

IN DEPTH

Key Findings

In the Phase 3 PIVOT-006 trial, the oncolytic immunotherapy cretostimogene grenadenorepvec achieved its primary endpoint of recurrence-free survival (RFS). With a median follow-up of 17 months, the treatment showed a hazard ratio of 0.32 (95% CI, 0.23–0.45; $p<0.0001$), representing a 68% relative reduction in the risk of recurrence compared to surveillance alone. This benefit was observed in patients with both high-grade and low-grade disease.

Technical Details

The PIVOT-006 trial (NCT06111235) enrolled 367 patients across approximately 90 clinical sites in the United States and Canada. The study compared adjuvant intravesical cretostimogene against surveillance following complete tumor resection via transurethral resection of bladder tumor (TURBT). Patients receiving the active treatment underwent an induction course followed by maintenance treatment at scheduled intervals.

The trial population included intermediate-risk NMIBC presentations, specifically:

- Recurrent low-grade Ta tumors within 12 months
- Solitary low-grade Ta tumors larger than 3 cm
- Multifocal low-grade Ta disease
- Low-grade T1 disease
- Solitary high-grade Ta tumors measuring 3 cm or less

Regarding safety, CG Oncology reported no Grade 3 or higher treatment-related adverse events and no treatment-related treatment discontinuations.

Background and Context

NMIBC is characterized by a high risk of recurrence even after surgical removal, often requiring repeated cystoscopies and additional resections. For intermediate-risk patients, clinicians must balance recurrence prevention against treatment toxicity. CG Oncology estimates that approximately 50,000 patients in the United States fall within the PIVOT-006 target population, a group for which no adjuvant treatment currently has specific FDA approval.

Significance and Outlook

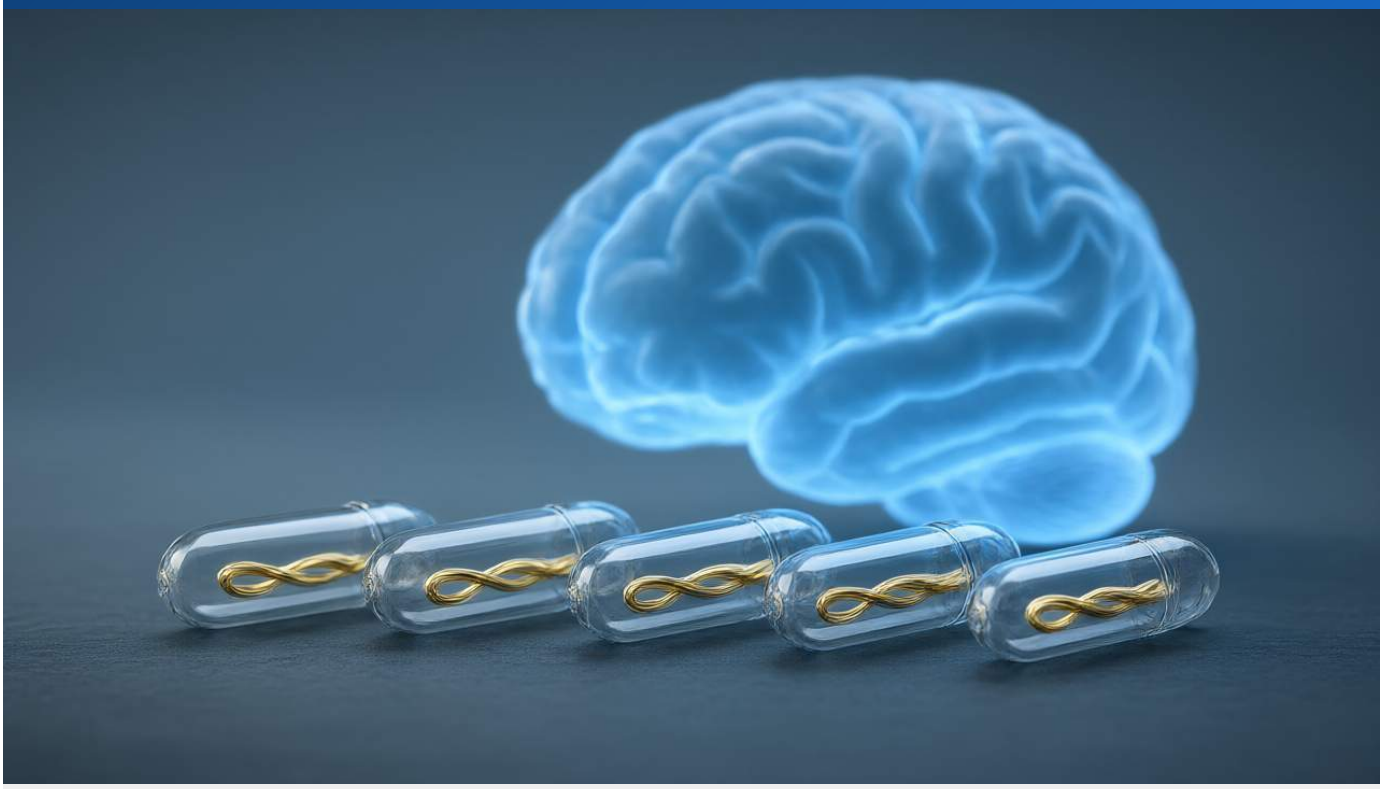
These results suggest a post-resection approach that reduces recurrence without the toxicity of intensive systemic treatments. While the topline findings are significant, the company has not yet released absolute RFS rates, median RFS, or detailed subgroup estimates. Additionally, as the comparator was surveillance rather than active intravesical therapy, the study does not establish superiority over other existing intravesical treatment strategies.

Source: https://oncodaily.com/not-to-miss/cretostimogene-634173

Collected: November 21, 2026 | Automated Research System (AI)

#13 BAFME Epilepsy: Antisense Oligonucleotides Reduce Neural Activity

Published November 16, 2026 京都大学 Japan



OVERVIEW

Researchers have developed antisense oligonucleotides (ASOs) that reduce aberrant neural activity in brain organoids derived from patients with benign adult familial myoclonus epilepsy (BAFME). This approach targets the underlying RNA cause of the disease rather than just treating symptoms. The findings suggest a path toward new therapeutic options for hereditary epilepsy.

IN DEPTH

Key Findings

A joint research group has demonstrated that antisense oligonucleotides (ASOs) can mitigate excessive neural activity in brain organoids derived from patients with benign adult familial myoclonus epilepsy (BAFME). The study confirms that targeting specific RNA molecules associated with the hereditary condition can reduce the hyperexcitability of neurons.

Technical Details

The research team utilized human induced pluripotent stem (iPS) cells from BAFME patients to create brain organoids—three-dimensional tissue structures that mimic the cerebral cortex. By using these organoids, the researchers were able to reproduce the disease pathology characterized by neurons that are prone to excitation. The team then designed and applied ASOs that bind to the RNA involved in the disease, which successfully suppressed the abnormal neural activity.

Background & Context

The study was a collaborative effort involving researchers from the RIKEN Center for Bios resourceful Research (iPS Drug Discovery Platform Team), Kyoto University (iPS Cell Research and Institute, Graduate School of Medicine), and Tohoku Institute of Technology. The research encompasses the entire pipeline from disease reproduction to the design and verification of a therapeutic candidate. The findings were published in the online edition of *Cell Reports Medicine* on November 13 (Japan time November 14), 2026.

Significance & Outlook

Current treatments for epilepsy primarily focus on suppressing seizures. This research is significant because it targets the molecular mechanism causing the disease. By demonstrating the efficacy of ASOs in patient-derived brain organoids, the team has established a foundation for developing new therapeutic options that address the root cause of BAFME. The research group intends to continue their efforts to bring these new treatment options to patients.

Source: https://www.kyoto-u.ac.jp/ja/research-news/2026-11-16-1

Collected: November 21, 2026 | Automated Research System (AI)