SITC 2026 Preview – Clinical and AI / ML



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New Trends in Immuno-Oncology Strategy at SITC 2026 (1/3)

- **VEGF × PD-(L)1 Bispecifics: Putting a Contested New Backbone on Trial**
  - SITC 2026 will devote a full session to whether the bispecific VEGF/PD-(L)1 approach is 'savior or pretender', covering vascular normalisation, immune remodelling and clinical results with VEGFR TKI combinations. Presentations will span the PD-L1×VEGF-A bispecific pumitamig and an α/β-biased IL-2 partial agonist combined with bispecific PD-1/VEGF-targeting antibodies. The competitive focus will be on whether the class earns a place alongside established checkpoint backbones or proves an expensive detour
- **In Vivo Cell Engineering: Moving Manufacture Into the Patient**
  - The conference will examine in vivo CAR generation through targeted lipid nanoparticles, RNA gene writers and engineered delivery platforms, with a dedicated in vivo vs. ex vivo debate. Presentations will include in vivo generation of functional CAR-T cells in non-human primates, myeloid-selective nanoparticles producing CAR macrophages and precision T cell engineering platforms. The key question will be whether in vivo approaches can relieve the cost and access constraints of manufactured cell therapy

New Trends in Immuno-Oncology Strategy at SITC 2026 (2/3)

- **Cancer Vaccines: Renewed Momentum From Antigen Discovery to the Clinic**
  - The sessions will be given over to personalised cancer vaccines, covering antigen diversity, delivery platforms and computation. Presentations will include a pancreatic cancer RNA vaccine, updated results from a lymph node-targeted KRAS vaccine, immunopeptidome-guided personalised peptide vaccines and cryptic antigens from the tumour dark proteome. The question will be whether antigen selection has matured enough to convert long-running promise into reproducible clinical benefit

- **Engineered Cytokines: Designing Around the Toxicity Ceiling**
  - A dedicated session will cover anchored, targeted and masked cytokine designs intended to separate anti-tumour activity from systemic toxicity. Scheduled data will span self-replicating mRNA encoding IL-12, receptor-biased IL-2 agonists, multi-agonist anchored constructs and locoregional IL-15. The competitive focus will be on whether engineering can finally make cytokines tolerable enough for broad combination use after decades of narrow therapeutic windows

New Trends in Immuno-Oncology Strategy at SITC 2026 (3/3)

- **Response Prediction: Spatial Biology and Ex Vivo Models Move Toward Decisions**
  - SITC 2026 will feature a plenary-level session on spatial biology and a dedicated session on human ex vivo models, from tumour explants to tumour-on-chip. Presentations will cover multiomic spatial profiling of neoadjuvant therapy, patient-derived tumour models, and regulatory considerations for new approach methodologies in safety assessment. These discussions will test whether predictive platforms are ready to inform patient selection rather than retrospective explanation

- **Host and Toxicity Biology: Widening What Counts as a Determinant of Response**
  - The programme will focus on immunosenescence, sex-specific immune fitness, microbiome and metabolism, and the mechanisms of immune-related adverse events. Topics will include aging and T-cell fitness and reproductive history in breast cancer immunity. The key area to watch will be whether host factors begin to shape trial design, with sex-specific biology new as a session theme this year

Key Sessions To Watch

Date	Session Title (short)	Type	Author / Institution	Why Watch
05 Nov 2026	New Agents in Development & Emerging Technologies Workshop	Pre-Conference Program	Priti Hegde, Kite Pharma	Four-part industry workshop covering cell therapy, engagers and bispecifics, ADCs and trial incorporation
06 Nov 2026	Smalley Memorial Award Lectureship: Personalized Cancer Vaccines	Keynote / Plenary	Catherine J. Wu, Dana-Farber Cancer Institute	The society's most prestigious award given to personalised vaccines, signalling the field's direction
06 Nov 2026	Waldmann Memorial Plenary: Cancer Vaccines, Current and Future	Keynote / Plenary	Vinod Balachandran, Memorial Sloan Kettering	Includes updated AMPLIFY-7P results and a pancreatic RNA vaccine; the largest vaccine readout block
06 Nov 2026	Cytokine Engineering and Clinical Translation	Concurrent Session	Georgina Long, Melanoma Institute Australia	Anchored, targeted and mRNA-delivered cytokine designs, including Phase I/II data for an LNP-encapsulated self-replicating IL-12 mRNA
06 Nov 2026	Biotech Session: The Next Generation of Off-the-Shelf IO	Concurrent Session	Harpreet Singh, Immatics	Initial IMA402 clinical results plus allogeneic and in vivo platforms, closing with an in vivo versus ex vivo debate
07 Nov 2026	Keynote: T Cell Recognition of Human Cancer	Keynote / Plenary	Ton Schumacher, Netherlands Cancer Institute	Sets the scientific frame for antigen recognition across vaccines, engagers and cell therapy
07 Nov 2026	Oral Abstract Session 3	Concurrent Session	Steven Isakoff, Mass General Brigham	The densest clinical block of the meeting, spanning invikafusp alfa (START-002), MDNA11, 3-year survival with RP1 plus nivolumab and SPEARHEAD-1
08 Nov 2026	Cooperative Binding: VEGF/PD-(L)1 Bispecifics – Savior or Pretender?	Regular Session	John V. Heymach, MD Anderson Cancer Center	A structured debate on the most contested emerging backbone in immuno-oncology

Industry-Sponsored Sessions & Focus Areas – SITC 2026



SITC 2026– Competitive Landscape at a Glance (1/2)

Name	Sessions	Companies / Assets	Why It Matters
VEGF × PD-(L)1 bispecifics	Multiple	BioNTech and Bristol Myers Squibb / pumitamig; Synthekine / STK-012 with PD-1/VEGF bispecifics; VEGFR TKI plus IO in RCC	A dedicated debate session and scheduled clinical analyses will test whether this class becomes a new combination backbone or fails to clear the bar set by existing checkpoint regimens
T-cell engagers & TCR bispecifics	Multiple	Immatics / IMA402 (PRAME), MAGEA4/8 TCERs; Genmab; Regeneron; Moderna / mRNA-encoded engagers; Antengene; LabGenius / LGTX-101	Engagers are competing with cell therapy for the same solid-tumour targets; the question will be whether off-the-shelf convenience offsets depth and durability of response
In vivo cell engineering	Multiple	Tessera Therapeutics / RNA gene writer; Syenex / VivoCell; Eli Lilly; United Immunity / myeloid-selective P-LNP; uBriGene	Several delivery routes are competing to engineer immune cells inside the patient; the practical question will be potency and control without manufacturing infrastructure
Allogeneic & off-the-shelf cell therapy	Multiple	Allogene Therapeutics / TRAVERSE; Cartherics / CTH-401; Eureka Therapeutics / ARTEMIS GPC3; LIfT BioSciences	Access and cost are the stated rationale; scheduled clinical experience will show whether allogeneic products hold activity against autologous benchmarks

SITC 2026– Competitive Landscape at a Glance (2/2)

Name	Sessions	Companies / Assets	Why It Matters
TIL therapy	Multiple	Iovance Biotherapeutics / lifileucel; Obsidian Therapeutics / regulatable cytokine TIL; OBX-115; GC101; LM103	TIL is broadening beyond melanoma into sarcoma, lung and glioma; the question will be whether IL-2-free and engineered formats reduce the toxicity and complexity that limit uptake
Engineered cytokines	Multiple	Synthekine / STK-012; Xilio Therapeutics / XTX501; Ankyra Therapeutics; MDNA11; STX-001; WTX-330	Masking, anchoring and receptor bias are competing solutions to the same toxicity problem; early clinical data will begin to separate the engineering strategies
Innate agonists & myeloid targeting	Multiple	Eikon Therapeutics / EIK1001; Primmune Therapeutics / PRTX007; Zola Therapeutics / Z-007; ImmunoGenesis / IMGS-203; LILRB checkpoints	Myeloid and innate biology is the fastest-growing scientific theme; the question will be whether agonists can be dosed to activate immunity without systemic inflammation
Spatial, ex vivo & AI-based response prediction	Multiple	10x Genomics; Elephas; Tempus AI; Onc.AI; Genialis; Indica Labs; PredxBio; RareCyte; Quanterix	Tools and diagnostics companies are competing to own patient selection; the question will be which platforms generate prospective evidence rather than retrospective correlation

Key Industry-Sponsored Sessions at SITC 2026 (1/4)

- **Sun Pharma:**
  - Focus Areas: Cosibelimab-ipdl, Advanced CSCC & Long-Term Evidence
  - Sun Pharma's programme is set to examine first-line treatment of advanced cutaneous squamous cell carcinoma with UNLOXCYT® (cosibelimab-ipdl), including new long-term evidence. Discussion is expected to centre on how durability data may shape treatment decisions in advanced CSCC
- **Syncromune:**
  - Focus Areas: SYNC-T SV-102, Intratumoral Immunotherapy & Metastatic Prostate Cancer
  - Syncromune's programme is set to present long-term overall survival follow-up from the Phase 1 trial of SYNC-T SV-102 in metastatic prostate cancer. Session is expected to extend to the LEGION-100 Phase 2a dose escalation and dose optimisation design

Key Industry-Sponsored Sessions at SITC 2026 (2/4)

- **Syenex:**
  - Focus Areas: VivoCell & Precision In Vivo T Cell Engineering
  - Syenex's programme is set to introduce the VivoCell platform for precision in vivo T cell engineering. The session is likely to examine how targeting specificity and control can be ensured when engineered T cells are generated without ex vivo manufacturing
- **ScaleReady:**
  - Focus Areas: SMART G-Rex, Process Analytics & Automation
  - ScaleReady's programme is set to cover integrated process analytic technology and intelligent automation in the SMART G-Rex system. Automation and in-process measurement are expected to emerge as key enablers of greater consistency in cell therapy manufacturing

Key Industry-Sponsored Sessions at SITC 2026 (3/4)

- **10x Genomics:**
  - Focus Areas: Single-Cell & Spatial Profiling of Response and Resistance
  - 10x Genomics' programme is set to examine how single-cell and spatial profiling can be used to investigate response and interrogate resistance to immunotherapy. High-resolution profiling is expected to provide deeper mechanistic insights into the factors driving treatment failure
- **Elephas:**
  - Focus Areas: Ex Vivo Profiling & Prediction of Checkpoint Inhibitor Response
  - Elephas' programme is set to examine ex vivo profiling of patient-derived live tumour fragments to predict response to immune checkpoint inhibitors. Discussion is expected to address how such platforms can be used to evaluate mechanisms of action and resistance

Key Industry-Sponsored Sessions at SITC 2026 (4/4)

- **Waters Biosciences:**
  - Focus Areas: Functional Flow Cytometry & Clinical-Ready Workflows
  - Waters Biosciences' programme is set to examine how flow cytometry can extend beyond phenotype toward functional immune interactions. Talk is expected to centre on moving these workflows toward clinical-ready use
- **Medscape:**
  - Focus Areas: Antigen-Directed Therapeutics & Individualised Treatment
  - Medscape's programme is set to cover individualised antigen-directed therapeutics, from mechanistic foundations across platforms to interpretation of the evolving evidence. Discussion is expected to address biomarkers and the multidisciplinary operational pathway from resection to dose

New Entrants

Asset / Company	2026 Presence
IMA402 (Immatics)	Initial clinical results for a PRAME-targeted bispecific TCER, with companion MAGEA4/8 TCER results also scheduled
Pumitamig (BioNTech / Bristol Myers Squibb)	A PD-L1×VEGF-A bispecific, including an exploratory Phase 2 analysis of ctDNA dynamics with first-line chemotherapy in extensive-stage small cell lung cancer
Cosibelimab-ipdl (Sun Pharma)	New long-term evidence in advanced cutaneous squamous cell carcinoma, framed around first-line treatment decisions
SV-102 / SYNC-T (Syncromune)	Long-term overall survival follow-up from the Phase 1 trial in metastatic prostate cancer, plus the LEGION-100 Phase 2a dose escalation and optimisation design
EIK1001 (Eikon Therapeutics)	A TLR7/8 dual agonist in two Phase 2/3 programmes, with pembrolizumab in advanced melanoma and with chemotherapy in stage 4 non-small cell lung cancer
CTH-401 (Cartherics)	Allogeneic iPSC-derived CAR-NK cells for the treatment of ovarian cancer
STX-001	Durable, interferon-associated systemic responses with an LNP-encapsulated IL-12-expressing self-replicating mRNA as monotherapy in advanced solid tumours
VET3-TGI	STEALTH-001, a Phase 1 study of an oncolytic vaccinia virus encoding a TGFβ inhibitor and IL-12 in advanced solid tumours

AI/ML Trends & Strategic Watchpoints at SITC 2026



AI / Digital Health Angle at SITC 2026 (1/3)

- **AI is narrowing from broad analytics toward therapeutic design**
  - SITC 2026 will host a dedicated session on AI-driven protein design to enhance cancer immunotherapy, covering protein design for cell therapies, de novo designed cytokines, structure-informed TCR discovery and a large language model framework for antigen prediction.
- **Prediction of response remains the second centre of gravity**
  - A concurrent session will address monitoring and predicting responses through AI, radiomics and other modalities, supported by a computational poster track covering foundation models for response prediction, virtual spatial transcriptomics from routine pathology images and imaging-based detection of checkpoint inhibitor pneumonitis. The key question will be whether these models generalise beyond the cohorts that produced them
- **Regulatory and biomarker discussion is beginning to include AI explicitly**
  - The pre-conference regulatory roundtable will convene FDA reviewers and industry for a panel on biomarker discovery and digital AI, alongside panels on regulatory frameworks for new agents. A separate talk will address considerations for using AI in grant writing. Placing AI inside regulatory and professional sessions, rather than only technical ones, suggests the field is moving toward questions of evidence and acceptable use

AI / Digital Health Angle at SITC 2026 (2/3)

- **Computational design, rather than patient-facing digital health, defines the AI theme**
  - As a translational and clinical research congress, SITC 2026 will concentrate its AI content on protein design, antigen prediction, pathology interpretation and response modelling. Patient-facing digital health such as remote monitoring, wearables or decision-support tools will have little presence, placing the AI discussion closer to discovery and trial design than to the delivery of care
- **Key sessions include:**
  - AI-driven Protein Design to Enhance Cancer Immunotherapy
  - Monitoring and Predicting Responses (AI, radiomics and other modalities)
  - Computational Spatial Biology and AI-assisted Interpretation
  - Biomarker Discovery and Digital AI
  - Identifying Determinants of Hot and Cold Tumors by AI-Assisted Perturb-Map
  - TransHAP: a large language model-based framework for antigen prediction
  - De novo designed cytokines expand immune signaling to explore and prime novel therapeutic T cell states

AI / Digital Health Angle at SITC 2026 (3/3)

- EVX-01 personalized AI-designed vaccine plus pembrolizumab, with neoantigen-specific T-cell responses
- Rational design of selective IL-2-based activators for CAR T cells using AlphaFold3 and physics-informed machine learning
- Benchmarking foundation models for immunotherapy response prediction in renal cell carcinoma
- Scalable LLM-enabled phenotyping of immune-related adverse events for real-world toxicity research

- **Sessions suggest AI and computational tools are increasingly being used to improve:**
  - De novo design of cytokines, TCRs and engager constructs
  - Neoantigen and immunopeptidome prediction for personalised vaccines
  - Prediction of checkpoint inhibitor response and resistance
  - Spatial interpretation of pathology images and virtual staining
  - Detection and phenotyping of immune-related adverse events
  - Automation and process control in cell therapy manufacture

What We're Watching for Post-SITC 2026

- Whether VEGF × PD-(L)1 bispecifics produce evidence that justifies a new combination backbone, or confirm the scepticism built into the congress's own debate session
- Whether in vivo cell engineering shows potency and control sufficient to challenge manufactured cell therapy on more than cost and access
- Whether cancer vaccine programmes convert improved antigen selection into reproducible clinical benefit across tumour types
- Whether engineered cytokines demonstrate that masking, anchoring and receptor bias genuinely widen the therapeutic window
- Whether allogeneic and off-the-shelf products hold activity against autologous benchmarks as clinical experience accumulates
- Whether spatial and ex vivo platforms move from retrospective correlation to prospective patient selection
- Whether host factors such as aging, sex and the microbiome begin to shape trial design rather than post-hoc analysis
- Whether AI-designed proteins progress from computational novelty into development candidates with clinical data behind them

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