Clinicaltrials.gov identifier	Sponsor	Study Title	Site	Phase	Histology	Lymphodepletion	IL-2	Treatment	Estimated enrollment (n)	Primary Endpoint
NCT05238818	XinWu	Single Arm Phase I Trial of Autologous Tumor Infiltrating Lymphocyte Injection (GT202) in the Treatment of Metastatic or Recurrent Gynecological Tumors	The Obstetrics and Gynecology Hospital of Fudan University, Shanghai, Shanghai, China, 200000	I	Metastatic or Recurrent Gynecological Tumors (limited to cervical cancer, ovarian cancer and endometrial cancer)	Yes	Yes, regimen unknow	Tumor Infiltrating Lymphocytes manufactured to express mbIL-12 (GT202)	36	Overall Response Rate Duration of Response Progression-free Survival Overall Survival Disease Control Rate
NCT03801083	Udai Kammula	Adoptive Transfer of Tumor Infiltrating Lymphocytes for Biliary Tract Cancers	Allyson Welsch, Pittsburgh, Pennsylvania, United States, 15232	II	Metastatic biliary tract carcinoma (including intrahepatic or extrahepatic cholangiocarcinoma, gallbladder cancer, or ampullary carcinoma).	Yes	HD	Autologous Tumor-Infiltrating Lymphocytes (TIL)	59	Objective Response Rate Complete Response Rate Duration of Response Disease control rate Progression-free Survival Overall Survival EORTC Quality of Life Questionnaire-Core 30 (QLQ-C30) EuroQol 5 dimensions 5 levels (EQ-5D-5L)
NCT05141474	Vall d'Hebron Institute of Oncology	Assessment of the Safety and Tolerability of ex vivo Next-generation Neoantigen-selected Tumor-infiltrating Lymphocyte (TIL) Therapy in Advanced Epithelial Tumors and Immune Checkpoint Blockade (ICB) Resistant Solid Tumors	Vall d'Hebron Institute of Oncology, Barcelona, Spain	I	All solid tumors	Yes	HD	NEXT-GEN-TIL (TILs that are selected based on their ability to recognize patient-specific neoantigens)	10	Incidence of AE Incidence of SAE Treatment-limiting toxicity Incidence of alternations in clinical laboratory test results Incidence of alterations in vital signs measurement Incidence of physical examination findings Assessment of performance status.

NCT03645928	Iovance Biotherapeutics, Inc.	Study of Autologous Tumor Infiltrating Lymphocytes in Patients With Solid Tumors	University of California, San Diego La Jolla, California, United States and 44 more	II	Cohort 1A, 1B, 1C: Malignant Melanoma Cohort 2A: Squamous Cell Carcinoma of the Head and Neck (HNSCC) Cohort 3A, 3B, 3C: Non-small Cell Lung Cancer (NSCLC)	Yes	Yes, regimen unknown	Cohort 2A + 3A: LN-145 + Pembrolizumab (post tumor resection) for up to 2 years Cohort 3B: LN-145 Cohort 3C LN-145 l + Ipilimumab (pre tumorresection) Nivolumab (post tumor resection) for up to 2 years	178 (total in all cohorts)	Objective response rate Safety profile measured by Grade ≥ 3 treatment-emergent adverse event
NCT05087745	Shanghai Juncell Therapeutics	A Clinical Study on TIL for the Treatment of Advanced Solid Tumors	Sir Run Run Shaw Hospital, Zhejiang University, School of Medicine, Hangzhou, Zhejiang, China, 310016	I	Advanced Solid Tumors	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	50	Adverse events Objective Response Rate Disease Control Rate Duration of Response Progression-Free Survival Overall Survival
NCT05430360	Grit Biotechnology	Autologous Tumor-infiltrating Lymphocyte Injection (GT201) for the Treatment of Metastatic/Recurrent Advanced Solid Tumors	The First Hospital of Zhejiang University Hangzhou, Zhejiang, China	I	Metastatic/Recurrent Advanced Solid Tumors	Yes	Yes, regimen unknow	Autologous Tumor-Infiltrating Lymphocytes (TIL) (GT201)	30	Safety Profile Measured by Grade ≥3 TEAEs
NCT03935893	Udai Kammula	Adoptive Transfer of Tumor Infiltrating Lymphocytes for Advanced Solid Cancers	UPMC Hillman Cancer Center Pittsburgh, Pennsylvania, United States	II	Gastric Cancer, Colorectal Cancer, Pancreatic Cancer, Sarcoma, Mesothelioma, Neuroendocrine Tumors, Squamous Cell Cancer, Merkel Cell Carcinoma, Mismatch Repair Deficiency, Microsatellite Instability	Yes	HD	Autologous Tumor-Infiltrating Lymphocytes (TIL)	10	Objective Response Rate
NCT03991741	Gregory Daniels	Adoptive Cell Transfer of Autologous Tumor Infiltrating Lymphocytes and	UC San Diego Moores Cancer Center La Jolla, California, United States	I	Metastatic Melanoma Head and Neck Cancer	Yes	HD	Autologous Tumor-Infiltrating Lymphocytes (TIL)	24	Dose Limiting Toxicity

		High-Dose Interleukin 2 in Select Solid Tumors								
NCT05333588	Hebei Senlang Biotechnology Inc., Ltd	The Safety Study of Autologous TILs Therapy for Patients With Glioblastoma Multiforme.	The Second Hospital of HeBei Medical University Shijiazhuang, Hebei, China	I	Glioblastoma Multiforme	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	20	Number of adverse events related to TILs infusion
NCT04426669	Intima Bioscience, Inc	A Study of Metastatic Gastrointestinal Cancers Treated With Tumor Infiltrating Lymphocytes in Which the Gene Encoding the Intracellular Immune Checkpoint CISH Is Inhibited Using CRISPR Genetic Engineering	Masonic Cancer Center, University of Minnesota Minneapolis, Minnesota, United States	I/II	Gastrointestinal Epithelial Cancer Colo-rectal Cancer Pancreatic Cancer Gall Bladder Cancer Colon Cancer Esophageal Cancer Stomach Cancer	Yes	HD	Tumor Infiltrating Lymphocytes (TIL) in which the intracellular immune checkpoint CISH has been inhibited using CRISPR gene editing	20	Maximum tolerated dose (MTD) Preliminary efficacy of tumor reactive autologous lymphocytes with knockout of CISH gene in patients with refractory metastatic gastrointestinal epithelial cancers: changes in diameter Safety of tumor reactive autologous lymphocytes with knockout of the CISH gene - Incidence of Adverse Events
NCT05142475	Shanghai Juncell Therapeutics	Study on TIL for the Treatment of Advanced Breast Cancer	Shanghai Tenth People's Hospital Shanghai, China	I	Breast Cancer	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	50	Adverse Events (AE) Objective Response Rate (ORR) Disease Control Rate (DCR) Duration of Response (DOR) Progression-Free Survival (PFS) Overall Survival (OS)
NCT04967833	Shanghai Juncell Therapeutics	Study on TIL for the Treatment of Advanced Solid Tumors	Tongren Hospital Shanghai Jiao Tong University School Of Medicine. Shanghai, China	I	Advanced Solid Tumors	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	20	Adverse Events (AE) Objective Response Rate (ORR) Disease Control Rate (DCR) Duration of Response (DOR) Progression-Free Survival (PFS)

										Overall Survival (OS)
NCT05098197	Shanghai Juncell Therapeutics	Study on TIL for the Treatment of Advanced Hepatobiliary-Pancreatic Cancers	Shanghai Tenth People's Hospital Shanghai, Shanghai, China	I	Advanced Liver Cancers	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	50	Adverse Events (AE) Objective Response Rate (ORR) Disease Control Rate (DCR) Duration of Response (DOR) Progression-Free Survival (PFS) Overall Survival (OS)
NCT05475847	Fudan University	Study of C-TIL052A Cell Therapy in Advanced Cervical Cancer	Fundan University Shanghai Cancer Center, Shanghai, China		Cervical Cancer	Yes	Yes, regimen unknown	Autologous Tumor-Infiltrating Lymphocytes (TIL)	20	Adverse Events (AE)
NCT04614103	Iovance Biotherapeutics, Inc.	Autologous LN-145 in Patients With Metastatic Non-Small-Cell Lung Cancer	City of Hope Duarte, California, United States and 40 more locations	II	Non Small Cell Lung Cancer	Yes	Yes, regimen unknow	Autologous Tumor-Infiltrating Lymphocytes (TIL/LN-145)	95	Objective Response Rate
NCT01174121	National Cancer Institute (NCI)	Immunotherapy Using Tumor Infiltrating Lymphocytes for Patients With Metastatic Cancer	National Institutes of Health Clinical Center Bethesda, Maryland, United States	II	Colorectal Cancer Pancreatic Cancer Ovarian Cancer Breast Carcinoma Endocrine Tumors/Neuroendocrine Tumors	Yes	HD	Experimental 1: Young CD8+ enriched TIL Experimental 2: Young unselected TIL Experimental 3: Young unselected TIL + Pembrolizumab pre (x1) and post (x 3) cell infusion Experimental 4: Young unselected TIL + Pembrolizumab (up to 8 doses) upon progression	332	Response rate
NCT04943913	Shanghai Juncell Therapeutics	Study on TIL for the Treatment of Brain Glioma	The Second Affiliated Hospital of Soochow University Suzhou, Jiangsu, China	I	Glioma	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	50	Adverse Events (AE) Objective Response Rate (ORR) Disease Control Rate (DCR Duration of Response (DOR) Progression-Free Survival (PFS)

										Overall Survival (OS)
NCT04960072	Shanghai Juncell Therapeutics	Study on TIL for the Treatment of r/r Gastrointestinal Tumors	Shanghai Tenth People's Hospital Shanghai, China	I	Gastrointestinal Tumor	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	50	Objective Response Rate (ORR) Disease Control Rate (DCR Duration of Response (DOR) Progression-Free Survival (PFS) Overall Survival (OS)
NCT04766320	Shanghai Juncell Therapeutics	Study on TIL for the Treatment of r/r Gynecologic Tumors	Shanghai Tenth People's Hospital Shanghai, Shanghai, China	I	Gynecologic Cancer	Yes	No	Autologous Tumor-Infiltrating Lymphocytes (TIL)	50	Objective Response Rate (ORR) Disease Control Rate (DCR Duration of Response (DOR) Progression-Free Survival (PFS) Overall Survival (OS)
NCT05366478	Suzhou BlueHorse Therapeutics Co., Ltd.	A Clinical Study of LM103 Injection in the Treatment of Addvanced Solid Tumors	Tianjin Beichen Hospital Tianjin, China	I	Melanoma Non Small Cell Lung Cancer Cervical Carcinoma	Yes	Yes, regimen unknown	Autologous Tumor-Infiltrating Lymphocytes (TIL)	15	Incidence and severity of adverse events (AEs)
NCT05681780	H. Lee Moffitt Cancer Center and Research Institute	Clinical Trial of CD40L-Augmented TIL for Patients With EGFR, ALK, ROS1 or HER2-Driven NSCLC	Moffitt Cancer Center Tampa, Florida, United States	I/II	Non Small Cell Lung Cancer	Yes	HD	Tumor-Infiltrating Lymphocytes (TIL) Nivolumab (pre and post cell infusion for up to 12 months)	20	Adverse Events (AE)
NCT04383067	Sheba Medical Center	Phase 2, Single-Center, Open Label Study of Autologous, Adoptive Cell Therapy Following a Reduced Intensity, Non-myeloablative, Lymphodepleting Induction Regimen in Metastatic Urothelial Carcinoma Patients	Sheba Medical Center, Israel	II	Urothelial Carcinoma	Yes, reduced intensity	HD	Autologous Tumor-Infiltrating Lymphocytes (TIL)	20	Efficacy Safety
NCT05417750	Shanghai Juncell Therapeutics	A Phase I Study on Autologous Tumor	Chinese PLA General Hospital	I	Cohort 1: Advanced solid tumors	Yes		Autologous Tumor-Infiltrating	60	Maximal Tolerance Dose Dose Limiting Toxicity

		Infiltrating Lymphocytes Injecti on (GC101 TIL) for the Treatment of Advanced Malignant Solid Tumors	Beijing, Beijing, China		Cohort 2: cervix tumors Cohort 3: malignant melanoma Cohort 4: HNSCC			Lymphocytes (TIL/ GC101 TIL) + Sintilimab		Adverse Events
NCT05573035	Lyell Immunopharma, Inc.	A Study to Investigate LYL845 in Adults With Solid Tumors	Ohio State University Medical Center Columbus, Ohio, United States and 3 other locations	I	Melanoma Non-small Cell Lung Cancer Colorectal Cancer	No	No	LYL845: autologous tumor infiltrating lymphocyte (TIL) enhanced via Epi-R, a proprietary epigenetic reprogramming technology	108	Incidence of dose-limiting toxicities (DLTs) Incidence of treatment-emergent adverse events (TEAEs) Severity of treatment-emergent adverse events (TEAEs) Determine recommended Phase 2 Dose Range (RP2DR)
NCT03449108	M.D. Anderson Cancer Center	LN-145 or LN-145-S1 in Treating Patients With Relapsed or Refractory Ovarian Cancer, Triple Negative Breast Cancer (TNBC), Anaplastic Thyroid Cancer, Osteosarcoma, or Other Bone and Soft Tissue Sarcomas	M D Anderson Cancer Center Houston, Texas, United States	II	Cohort 1: Ovarian Cancer, Triple Negative Breast Cancer (TNBC), Osteosarcoma, Other Bone and Soft Tissue Sarcomas Cohort 2: Anaplastic Thyroid Cancer	Yes	HD	Cohort 1: Autologous tumor infiltrating lymphocyte (TIL), Nivolumab + Ipilimumab (x1) pre surgery, Nivolumab (x4) post TIL infusion Corhort 2: Autologous tumor infiltrating lymphocyte (TIL)	95	Objective response rate
NCT05430373	Grit Biotechnology	GT101 Injection for the Treatment of Metastatic or Recurrent Solid Tumors	The fifth medical center of the General Hospital of the Chinese people's Liberation Army Beijing, Beijing, China	I	Solid tumors	Yes	HD	Autologous tumor-infiltrating lymphocytes (TIL/ GT101)	31	Safety Profile Measured by Grade ≥3 TEAEs Objective response rate Progression-free survival Overall survival
NCT04643574	Centre Hospitalier Universitaire Vaudois	NeoTIL in Advanced Solid Tumors	Centre hospitalier universitaire vaudois (CHUV)	I	Solid tumors	Yes	HD	Autologous Tumor-Infiltrating Lymphocytes Enriche	42	Evaluation of the number of patients who successfully receive NeoTIL-ACT in

			Lausanne, Vaud, Switzerland					d for Tumor Antigen Specificity (NeoTIL) Low dose-irradiation (LDI) administered once to tumor lesions before infusion of NeoTIL		combination with LDI (feasibility) Toxicity of NeoTIL-ACT in combination with LDI Objective response rate
NCT04072263	Leiden University Medical Center	Adoptive T Cell Therapy in Patients With Recurrent Ovarian Cancer	Leiden University Medical Center, Netherlands	I/II	Epithelial Ovarian Cancer	No	No	Cohort 1: Carboplatin-paclitaxel day1, q3 weeks, 6x TIL starting 14 days after the 2nd chemotherapy cycle Cohort 2: Above regimen + IFNα (3x10e6 U daily) starting one week before the first TIL infusion for 12 weeks in total	12	NCI CTC criteria
NCT03108495	Iovance Biotherapeutics, Inc	Study of LN-145, Autologous Tumor Infiltrating Lymphocytes in the Treatment of Patients With Cervical Carcinoma	St. Joseph's Hospital and Medical Center Center For Women's Health, Phoenix, Arizona, United States, 85013 and 39 other locations	II	Cervical carcinoma	Yes	Yes, regimen unknown	Cohort 1 + 2: LN-145 Cohort 2: LN Cohort 3: LN-145 + Pembrolizumab (up to 24 months) Cohort 4: LN-145 Cohort 5: LN-145	189	Cohort 1 and 2: Objective Response Rate Cohort 3: Adverse Events Cohort 4: Efficacy and Adverse Events Cohort 5: Efficacy and Adverse Events
NCT04611126	Inge Marie Svane	T-cell therapu in Combination With Nivolumab, Relatlimab and Ipilimumab for Patients With Metastatic Ovarian Cancer	National Center for Cancer Immune Therapy, Herlev, Denmark	I/II	Epithelial ovarian cancer	Yes	No	Step 1: TIL + Nivolumab (x4) +Relatlimab (x 4) Step 2: Ipilimumab (x1) + TIL + Nivolumab (x4) + Relatlimab (x4)	18	Number of patients excluded due to treatment related safety issues Fraction of patients experiencing grade III or worse adverse events Number of patients excluded due to feasibility issues
NCT05397093	Instil Bio	ITIL-306 in Advanced Solid Tumors	Washington University School of Medicine Saint Louis,	I	Epithelial Ovarian Cancer Non-small Cell Lung Cancer Renal Cell Carcinoma	Yes	No	Tumor-infiltrating lymphocytes containing a unique molecule designed to increase TIL activity	51	Frequency and severity of ITIL-306 treatment-emergent adverse events (AEs), serious AEs, and AEs of special interest (AESI)

			Missouri, United States Memorial Sloan Kettering Cancer Center New York, New York, United States					when it encounters folate receptor α (FOLR1) on the tumor (ITIL-306) Phase 1a: Dose Escalation Phase 2: Expansion		
NCT04674488	Shanghai OriginCell Therapeutics Co., Ltd.	TILs for Treatment of Metastatic or Recurrent Cervical Cancer	Shanghai general hospital Shanghai, Shanghai, China	I	Cervical Cancer	Yes	HD	Autologous Tumor-Infiltrating Lymphocytes (TIL)	15	dose limited toxicity, DLT
NCT05361174	Iovance Biotherapeutics, Inc.	A Study to Investigate the Efficacy and Safety of an Infusion of IOV-4001 in Adult Participants With Unresectable or Metastatic Melanoma or Stage III or IV Non-small-cell Lung Cancer	University of Louisville Louisville, Kentucky, United States Memorial Sloan Kettering Cancer Center, New York, United States University of Cincinnati, Ohio, United States	I/II	Melanoma NSCLC	Yes	HD	PD-1 Knockout Tumor-infiltrating Lymphocytes (IOV-4001)	53 (total in all cohorts)	Phase I: Safety of IOV-4001 Phase 2: Objective Response Rate (ORR)

Table S1. Recruiting TIL trials for patients with non-melanoma solid cancers (assessed, January 23, 2023). Trial information is assessed from Clinicaltrials.gov using search setting: "Recruiting", "Interventional (clinical trial)", "Adults", "Tumor infiltrating Lymphocytes". HD: High Dose.