



Use of CyTOF® Technology in Cancer Clinical Research Trials (68)

Fluidigm Products Are For Research Use Only. Not for use in diagnostic procedures.

National Clinical Trial (NCT) Number	Clinical Research Trial Name	Country	Sponsor	Application	Platform	CyTOF: Study Objective or Correlative Study	Associated Abstract or Publication	Investigator	Collaborator	Recruitment Status	Start Date	Completion Date	Enrollment	Phase	Study Posted Date
NCT00574288	<a href="#">Daratumumab (HuMax<sup>®</sup>-CD38) Safety Study in Multiple Myeloma</a>	US, Denmark, Netherlands, Sweden	Janssen Research & Development	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	N/A	none	Completed	2008	2017	104	Phase 2	December 17, 2007
NCT00903968	<a href="#">Combination Plerixafor (AMD3100) and Bortezomib in Relapsed or Relapsed/Refractory Multiple Myeloma</a>	US	Dana-Farber Cancer Institute	Oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Irene Ghobrial	Brigham and Women's Hospital, Genzyme	Completed	2009	2016	58	Phase 1/2	May 19, 2009
NCT00943943	<a href="#">Granulocyte-colony Stimulating Factor (G-CSF) and Plerixafor Plus Sorafenib for Acute Myelogenous Leukemia (AML) With FLT3 Mutations</a>	US	MD Anderson Cancer Center	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Michael Andreeff	Bayer, Genzyme, Amgen, National Cancer Institute, Georgia Institute of Technology	Completed	2010	2017	33	Phase 1	July 22, 2009
NCT01449279	<a href="#">Pilot Ipilimumab in Stage IV Melanoma Receiving Palliative Radiation Therapy</a>	US	Stanford University	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Susan Knox	none	Completed	2011	2016	22	Phase 2	October 10, 2011
NCT01498978	<a href="#">Ipilimumab in Combination With Androgen Suppression Therapy in Treating Patients With Metastatic Hormone-Resistant Prostate Cancer</a>	US	OHSU Knight Cancer Institute	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Julie Graff	National Cancer Institute	Completed	2012	2020	10	Phase 2	December 26, 2011
NCT01697527	<a href="#">Gene and Vaccine Therapy in Treating Patients With Advanced Malignancies</a>	US	Jonsson Comprehensive Cancer Center	Oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Antonio Ribas	University of California Los Angeles	Active, not recruiting	2012	2022	6	Phase 2	October 2, 2012
NCT01881867	<a href="#">CYT107 After Vaccine Treatment (Provenge<sup>®</sup>) in Patients With Metastatic Castration-Resistant Prostate Cancer</a>	US	Fred Hutchinson Cancer Research Center	Immuno-oncology, vaccine	Mass cytometry	Correlative	<a href="#">Abstract</a>	Lawrence Fong	Cancer Immunotherapy Trials Network, National Cancer Institute	Completed	2013	2018	54	Phase 2	June 20, 2013
NCT01903993	<a href="#">A Randomized Phase 2 Study of Atezolizumab (an Engineered Anti-PDL1 Antibody) Compared With Docetaxel in Participants With Locally Advanced or Metastatic Non-Small Cell Lung Cancer Who Have Failed Platinum Therapy - "POPLAR"</a>	US, UK, France, Germany, Korea, Sweden	Hoffmann-La Roche	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	N/A	65 study locations	Completed	2013	2018	287	Phase 2	July 19, 2013
NCT01946477	<a href="#">Pomalidomide in Combination With Low-dose Dexamethasone or Pomalidomide in Combination With Low-dose Dexamethasone and Daratumumab in Subjects With Relapsed or Refractory Multiple Myeloma Following Lenalidomide-based Therapy in the First or Second Line Setting (POM MM 014)</a>	US	Celgene	Immuno-oncology	Mass cytometry	Exploratory objective	<a href="#">Publication</a>	Amit Agarwal	49 study locations	Recruiting	2014	2025	156	Phase 2	September 13, 2013
NCT01985126	<a href="#">An Efficacy and Safety Study of Daratumumab in Patients With Multiple Myeloma Who Have Received at Least 3 Prior Lines of Therapy (Including a Proteasome Inhibitor [PI] and Immunomodulatory Drug [IMiD]) or Are Double Refractory to a PI and an IMiD</a>	US, Canada, Spain	Janssen Research & Development	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	N/A	23 study locations	Completed	2013	2017	124	Phase 2	November 5, 2013
NCT02076009	<a href="#">A Study Comparing Daratumumab, Lenalidomide, and Dexamethasone With Lenalidomide and Dexamethasone in Relapsed or Refractory Multiple Myeloma</a>	US	Janssen Research & Development	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Janssen Research & Development Clinical Trial	none	<a href="#">Active, not recruiting (results available)</a>	2014	2021	569	Phase 3	March 3, 2014
NCT02111941	<a href="#">Vaccine Therapy in Treating Patients With Stage IIIC-IV Ovarian Epithelial, Fallopian Tube, or Primary Peritoneal Cavity Cancer Following Surgery and Chemotherapy</a>	US	Mayo Clinic	Immuno-oncology, vaccine	Mass cytometry	Other outcome measure	<a href="#">Publication</a>	Matthew Block	National Cancer Institute	Active, not recruiting	2014	2021	19	Early Phase 1	April 11, 2014
NCT02397720	<a href="#">Nivolumab and Atezolizumab With or Without Ipilimumab in Treating Patients With Refractory/Relapsed or Newly Diagnosed Acute Myeloid Leukemia</a>	US	MD Anderson Cancer Center	Immuno-oncology	Mass cytometry	Objective	<a href="#">Abstract</a>	Naval Daver	National Cancer Institute	Recruiting	2015	2022	182	Phase 2	March 25, 2015
NCT02399371	<a href="#">Pembrolizumab in Treating Patients With Malignant Mesothelioma</a>	US	University of Chicago	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Hedy Kindler	National Cancer Institute	Active, not recruiting	2015	2023	65	Phase 2	March 26, 2015
NCT02519322	<a href="#">Neoadjuvant and Adjuvant Checkpoint Blockade</a>	US	MD Anderson Cancer Center	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	Rodabe Amaria	National Cancer Institute	Recruiting	2016	2020	53	Phase 2	August 10, 2015
NCT02523469	<a href="#">ALT-803 Plus Nivolumab in Patients With Pretreated, Advanced or Metastatic Non-Small Cell Lung Cancer</a>	US	Medical University of South Carolina	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract (P352)</a>	Carsten Krieg	Altos BioScience	Active, not recruiting	2016	2022	58	Phase 1/2	August 14, 2015
NCT02655458	<a href="#">Elotuzumab in Autologous Stem Cell Transplantation (ASCT) and Lenalidomide Maintenance for Multiple Myeloma</a>	US	Icahn School of Medicine at Mount Sinai	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Hearn Jay Cho	Bristol-Myers Squibb	Completed	2016	2017	15	Phase 1	January 14, 2016
NCT02669173	<a href="#">Capecitabine + Bevacizumab in Patients With Recurrent Glioblastoma</a>	US	Case Comprehensive Cancer Center	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Publication</a>	David Peereboom	Cleveland Clinic Taussig Cancer Institute	Recruiting	2016	2021	12	Phase 1	February 1, 2016
NCT02773030	<a href="#">A Study to Determine Dose and Tolerability of CC-220 Monotherapy, in Combination With Dexamethasone, and in Combination With Dexamethasone and Daratumumab or Bortezomib in Subjects With Relapsed and Refractory Multiple Myeloma (MM)</a>	US, UK, France, Germany, Italy, Japan, Spain, Netherlands	Celgene	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Amine Bensmaïne	60 study locations	Recruiting	2016	2027	464	Phase 1/2	May 16, 2016
NCT02869633	<a href="#">Ibrutinib in Treating Patients With Refractory or Relapsed Lymphoma After Donor Stem Cell Transplant</a>	US	Vanderbilt-Ingram Cancer Center	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Madan Jagasia	National Cancer Institute	Active, not recruiting	2016	2023	23	Phase 2	August 17, 2016
NCT02926833	<a href="#">Safety and Efficacy of KTE-C19 in Combination With Atezolizumab in Adults With Refractory Diffuse Large B-Cell Lymphoma (DLBCL) (ZUMA-G)</a>	US	Kite, a Gilead Company	Immuno-oncology, CAR T cell therapy	Mass cytometry	Correlative	<a href="#">Abstract (P210)</a>	Kite Study Director	Genentech	Active, not recruiting	2016	2033	37	Phase 1/2	October 6, 2016

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NCT02953561	<a href="#">Avelumab and Azacitidine in Treating Patients With Refractory or Relapsed Acute Myeloid Leukemia</a>	US	MD Anderson Cancer Center	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Naval Daver	National Cancer Institute	<a href="#">Terminated (results available)</a>	2017	2019	19	Phase 1/2	November 2, 2016
NCT02960230	<a href="#">H3_3K27M Peptide Vaccine With Nivolumab for Children With Newly Diagnosed DIPG and Other Gliomas</a>	US	Sabine Mueller, University of California, San Francisco	Immuno-oncology	Mass Cytometry	Other outcome measure	<a href="#">Publication</a>	Sabine Mueller	The V Foundation for Cancer Research, Pacific Pediatric Neuro-Oncology Consortium, Bristol-Myers Squibb	<a href="#">Recruiting</a>	2016	2023	49	Phase 1/2	November 9, 2016
NCT02981628	<a href="#">Inotuzumab Oxogamicin in Treating Younger Patients With B- Lymphoblastic Lymphoma or Relapsed or Refractory CD22-Positive B- Acute Lymphoblastic Leukemia</a>	US	Children's Oncology Group	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Maureen M. O'Brien	National Cancer Institute	<a href="#">Active, not recruiting</a>	2017	2022	53	Phase 2	December 5, 2016
NCT03038672	<a href="#">Nivolumab With or Without Varilumab in Treating Patients With Relapsed or Refractory Aggressive B-cell Lymphoma</a>	US	National Cancer Institute	Immuno-oncology	Mass cytometry	Exploratory objective	<a href="#">Abstract</a>	Stephen Ansell	Mayo Clinic Cancer Center	<a href="#">Recruiting</a>	2017	2020	106	Phase 2	February 1, 2017
NCT03068819	<a href="#">Cytokine Induced Memory-like NK Cell Adoptive Therapy for Relapsed AML After Allogeneic Hematopoietic Cell Transplant</a>	US	Washington University School of Medicine in St. Louis	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Amanda Cashen	none	<a href="#">Recruiting</a>	2017	2024	24	Phase 1	March 3, 2017
NCT03140943	<a href="#">Carfilzomib Thalidomide and Dexamethasone in Patients With Relapsed and/or Refractory Multiple Myeloma</a>	Singapore	National University Hospital, Singapore	Oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Wee Joo Chng	Celgene	<a href="#">Recruiting</a>	2017	2022	100	Phase 2	May 4, 2017
NCT03177239	<a href="#">Phase II Sequential Treatment Trial of Single Agent Nivolumab, Then Combination Ipilimumab + Nivolumab in Metastatic or Unresectable, Non-Clear Cell Renal Cell Carcinoma (ANZUP1602) (UNISON)</a>	Australia	Australian and New Zealand Urogenital and Prostate Cancer Trials Group	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Craig Gedye, Ian Davis	Bristol-Myers Squibb	<a href="#">Active, not recruiting</a>	2017	2022	85	Phase 2	June 6, 2017
NCT03207854	<a href="#">Collection of Immunology Specimens From Patients With Cancer or Blood Disorders, and Healthy Volunteers</a>	US	University of Southern California Norris Comprehensive Cancer Center	Immuno-oncology	Mass cytometry	Primary outcome measure	N/A	Akil Merchant	National Cancer Institute	<a href="#">Recruiting</a>	2017	2023	500	N/A (observational)	July 5, 2017
NCT03212274	<a href="#">Olaparib in Treating Patients With Advanced Glioma, Cholangiocarcinoma, or Solid Tumors With IDH1 or IDH2 Mutations</a>	US	National Cancer Institute	Oncology	Imaging Mass Cytometry™	Exploratory objective	N/A	Patricia M. LoRusso	45 study locations	<a href="#">Recruiting</a>	2018	2021	145	Phase 2	July 11, 2017
NCT03214562	<a href="#">Venetoclax With Combination Chemotherapy in Treating Patients With Newly Diagnosed or Relapsed or Refractory Acute Myeloid Leukemia</a>	US	MD Anderson Cancer Center	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Courtney DiNardo	National Cancer Institute	<a href="#">Recruiting</a>	2017	2023	56	Phase 1/2	July 11, 2017
NCT03239145	<a href="#">Pembrolizumab (Anti-PD-1) and AMG386 (Angiopoietin-2 (Ang-2) in Patients With Advanced Solid Tumor</a>	US	Dana-Farber Cancer Institute	Immuno-oncology	Mass cytometry	Correlative study	<a href="#">Abstract</a>	Osama E. Rahma	Merck Sharp & Dohme Corp., Amgen	<a href="#">Active, not recruiting</a>	2017	2024	60	Phase 1	August 3, 2017
NCT03299946	<a href="#">Feasibility and Efficacy of Neoadjuvant Cabozantinib Plus Nivolumab (CaboNivo) Followed by Definitive Resection for Patients With Locally Advanced Hepatocellular Carcinoma (HCC)</a>	US	Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins	Immuno-oncology	Mass cytometry and Imaging Mass Cytometry	Correlative study	<a href="#">Case report</a>	Daniel Laheru	Exelixis, Bristol-Myers Squibb	<a href="#">Active, not recruiting</a>	2018	2022	15	Phase 1	March 4, 2017
NCT03358719	<a href="#">DEC-205/NY-ESO-1 Fusion Protein CDX-1401, Poly ICLG, Decitabine, and Nivolumab in Treating Patients With Myelodysplastic Syndrome or Acute Myeloid Leukemia</a>	US	Roswell Park Cancer Institute	Immuno-oncology, vaccine	Mass cytometry	Secondary outcome measure	N/A	Elizabeth Griffiths	National Cancer Institute	<a href="#">Active, not recruiting</a>	2018	2021	8	Phase 1	December 2, 2017
NCT03430479	<a href="#">Anti PD-1 Antibody With Radiation Therapy in Patients With HER2-negative Metastatic Breast Cancer</a>	Japan	Kyoto Breast Cancer Research Network	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Masahiro Takada	none	<a href="#">Active, not recruiting</a>	2017	2020	32	Phase 1/2	February 13, 2018
NCT03454282	<a href="#">Impact of Dietary Intervention on Tumor Immunity: the Digest Trial</a>	Italy	Fondazione IRCCS Istituto Nazionale dei Tumori	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Filippo de Braud	National Health Research Institutes (Taiwan), University of Milan, Centro de Investigacion en Nanomateriales y Nanotecnologia, INSERM, Martin-Luther-Universitat Halle-Wittenberg	<a href="#">Recruiting</a>	2018	2020	100	N/A	March 5, 2018
NCT03513614	<a href="#">Tailored Axillary Surgery with or without Axillary Lymph Node Dissection Followed by Radiotherapy in Patients with Clinically Node-Positive Breast Cancer (TAXIS)</a>	Switzerland, Austria	Swiss Group for Clinical Cancer Research	Oncology	Imaging Mass Cytometry	Correlative	<a href="#">Publication</a>	Walter Weber	International Breast Cancer Study Group, Austrian Breast Cancer Study Group	<a href="#">Recruiting</a>	2018	2043	1500	Phase 3	May 1, 2018
NCT03532217	<a href="#">Neoantigen DNA Vaccine in Combination With Nivolumab/ipilimumab and PROSTVAC in Metastatic Hormone-Sensitive Prostate Cancer</a>	US	Washington University School of Medicine in St. Louis	Immuno-oncology	Mass cytometry	Primary outcome measure	N/A	Russell Pachynski	Bristol-Myers Squibb	<a href="#">Active, not recruiting</a>	2018	2023	20	Phase 1	May 22, 2018
NCT03548207	<a href="#">A Study of JNJ-68284528, a Chimeric Antigen Receptor T Cell (CAR-T) Therapy Directed Against B-Cell Maturation Antigen (BCMA) in Participants With Relapsed or Refractory Multiple Myeloma (CARITUDE-1)</a>	US, France, Belgium, Netherlands, Japan	Janssen Research & Development	Immuno-oncology, CAR T cell therapy	Mass cytometry	Secondary outcome measure	N/A	Janssen Research & Development	21 study locations	<a href="#">Active, not recruiting</a>	2018	2022	118	Phase 1/2	June 7, 2018
NCT03686202	<a href="#">Feasibility Study of Microbial Ecosystem Therapeutics (MET-4) to Evaluate Effects of Fecal Microbiome in Patients on Immunotherapy (MET4-IG)</a>	Canada	University Health Network, Toronto	Immuno-oncology, gut microbiota	Mass cytometry	Other outcome measure	N/A	Lillian Siu	NuBiyota	<a href="#">Recruiting</a>	2018	2023	65	Early Phase 1	September 26, 2018
NCT03708224	<a href="#">Preoperative Immunotherapy in Patients With Squamous Cell Carcinoma of the Head and Neck</a>	US	University of California, San Francisco	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Alain Algazi	Genentech	<a href="#">Recruiting</a>	2019	2025	8	Phase 2	October 17, 2018

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NCT03733990	<a href="#">A Study to Evaluate Safety, Tolerability and Preliminary Efficacy of FP-1305 in Cancer Patients (MATINS)</a>	Finland	Faron Pharmaceuticals	Immuno-oncology	Mass cytometry	Correlative	<a href="#">Abstract</a>	Petri Bono	University of Turku, Royal Marsden NHS Foundation Trust, Erasmus University Medical Center	Recruiting	2018	2024	650	Phase 1/2	November 7, 2018
NCT03734198	<a href="#">Evaluation of the Safety and Efficacy of the Association of Ibrutinib and Daratumumab in Relapsed/Refractory Chronic Lymphocytic Leukemia With p53 Dysfunction (IDAS3)</a>	France	French Innovative Leukemia Organisation	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Alain Delmer	Janssen	Recruiting	2018	2027	44	Phase 2	November 7, 2018
NCT03915379	<a href="#">A Study of JNJ-67571244 in Participants With Relapsed or Refractory Acute Myeloid Leukemia (AML) or Myelodysplastic Syndrome (MDS)</a>	US	Janssen Research & Development	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Janssen Research & Development	none	Recruiting	2019	2022	90	Phase 1	February 28, 2019
NCT03955978	<a href="#">TSR-042 in Addition to Standard of Care Definitive Radiation for Inoperable Endometrial Cancer</a>	US	Washington University School of Medicine in St. Louis	Immuno-oncology	Mass cytometry	Exploratory objective	N/A	Stephanie Markovina	Tesaro	Recruiting	2019	2022	12	Phase 1	May 20, 2019
NCT03979508	<a href="#">A Breast Cancer Genome Guided Therapy Study</a>	US	Mayo Clinic	Oncology	Mass cytometry and Imaging Mass Cytometry	Exploratory objective	N/A	Matthew P. Goetz	National Cancer Institute	Recruiting	2020	2022	100	Phase 2	June 7, 2019
NCT04009967	<a href="#">Biomarkers for Neoadjuvant Pembrolizumab in Non-Metastatic Prostate Cancer Positive by 18FDG-PET Scanning (PICT-01)</a>	Canada	CHU de Quebec-Universite Laval	Immuno-oncology	Imaging Mass Cytometry	Primary outcome measure	N/A	Yves Fradet	Merck Sharp & Dohme Corp.	Recruiting	2020	2022	30	Phase 2	July 8, 2019
NCT04060537	<a href="#">Identification of Novel Biomarkers of Response to Systemic Treatments in Renal Cell Cancer (ARTIST_RCC)</a>	UK	Cambridge University Hospitals NHS Foundation Trust	Immuno-oncology	Mass cytometry	Primary outcome measure	N/A	Sarah Welsh	none	Not yet recruiting	2020	2022	12	N/A (observational)	August 19, 2019
NCT04068194	<a href="#">Testing the Combination of New Anti-cancer Drug Nedisertib With Avelumab and Radiation Therapy for Advanced/Metastatic Solid Tumors and Hepatobiliary Malignancies</a>	US	National Cancer Institute	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Kristen Spencer	Rutgers Cancer Institute of New Jersey	Recruiting	2019	2022	92	Phase 1/2	August 28, 2019
NCT04091867	<a href="#">sEphA4-HSA With Cetuximab and RT in Patients With High Risk, LAHNSCC and Heavy Smoking Histories</a>	US	University of Colorado, Denver	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Sana Karam	National Cancer Institute, Vasgene Therapeutics	Recruiting	2020	2021	30	Phase 1	September 17, 2019
NCT04134325	<a href="#">Study of PD-1 Inhibitors After CD30-CAR T Cell Therapy in Relapsed/Refractory Hodgkin Lymphoma</a>	US	UNC Lineberger Comprehensive Cancer Center	Immuno-oncology, CAR T cell therapy	Mass cytometry	Other outcome measure	N/A	Timothy Voorhees	American Society of Clinical Oncology	Recruiting	2019	2021	10	Early Phase 1	August 28, 2019
NCT04135079	<a href="#">Immune Profiling in Multiple Myeloma</a>	Italy	University of Turin	Oncology	Mass cytometry	Secondary outcome measure	N/A	Mario Boccardo	none	Recruiting	2019	2022	50	N/A (observational)	October 22, 2019
NCT04181827	<a href="#">A Study Comparing JNJ-68284528, a CAR-T Therapy Directed Against B-cell Maturation Antigen (BCMA), Versus Pomalidomide, Bortezomib, and Dexamethasone (Pvd) or Daratumumab, Pomalidomide and Dexamethasone (DPd) in Participants With Relapsed and Lenalidomide-Refractory Multiple Myeloma (CARTITUDE-4)</a>	US	Janssen Research & Development	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Janssen Research & Development	none	Recruiting	2020	2026	400	Phase 3	December 2, 2019
NCT04211675	<a href="#">NK Cells Infusions With Irinotecan, Temozolomide, and Dinutuximab (STING)</a>	US	Nationwide Children's Hospital	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Mark Ranalli	Ohio State University	Not yet recruiting	2021	2024	31	Phase 1/2	December 26, 2019
NCT04231734	<a href="#">Ketogenic Diet in Patients With Untreated Low Tumor Burden Mantle Cell Lymphoma</a>	US	Weill Medical College of Cornell University	Oncology	Mass cytometry	Secondary outcome measure	N/A	Peter Martin	none	Recruiting	2020	2022	8	N/A	January 18, 2020
NCT04254419	<a href="#">Intra-tumoral Injection of Natural Killer Cells in High-Grade Gliomas (NK HGG)</a>	US	Nationwide Children's Hospital	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Mohamed S. Abdelbaki	none	Not yet recruiting	2021	2025	24	Phase 1	February 5, 2020
NCT04270149	<a href="#">Cancer Peptides Plus GM-CSF and Adjuvant in Breast Cancer</a>	US	Duke University	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Herbert Lyerly	none	Recruiting	2020	2024	18	Phase 1	February 17, 2020
NCT04340024	<a href="#">Discovery of Biomarkers for Intrinsic Radiation Sensitivity in Cancer Patients</a>	Singapore	National Cancer Centre	Oncology	Mass cytometry	Primary outcome measure	N/A	Melvin Chua	Duke-NUS Graduate Medical School, Ferring Pharmaceuticals, ImmunoSCAPE, Decipher Biosciences	Recruiting	2015	2026	5000	N/A (observational)	April 9, 2020
NCT04380545	<a href="#">Nivolumab, Fluorouracil, and Interferon Alpha 2B for the Treatment of Unresectable Fibrolamellar Cancer</a>	US	MD Anderson Cancer Center	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Ahmed O. Kaseb	National Cancer Institute	Recruiting	2020	2021	15	Phase 1/2	May 8, 2020
NCT04393285	<a href="#">Abemaciclib and Letrozole to Treat Endometrial Cancer</a>	US	Gynecologic Oncology Group	Oncology	Imaging Mass Cytometry	Other outcome measure	N/A	Marilyn Huang	none	Recruiting	2020	2023	50	Phase 2	May 19, 2020
NCT04513028	<a href="#">Beta Glucan's Effect on Pembrolizumab Immunologic Response in Stage III-IV Melanoma</a>	US	University of Louisville	Immuno-oncology	Mass cytometry	Primary outcome measure	N/A	Kelly McMasters	none	Recruiting	2020	2025	30	N/A	August 14, 2020
NCT04566029	<a href="#">Evolution of Proteomic Profiles of Intestinal Microbiota in Patients With Locally Advanced or Metastatic Urothelial Carcinomas (AMI)</a>	France	Centre Hospitalier Universitaire de Nimes	Oncology	Mass cytometry	Secondary outcome measure	N/A	Nadine Houede	Centre Leon Berard, ICM parc euromedecine, Institut Sainte Cancerologie Lucien Neuwirth, ICO-Site Paul Papin	Not yet recruiting	2020	2022	40	N/A (observational)	September 28, 2020
NCT04581343	<a href="#">A Phase 1B Study of Canakinumab, Spartalizumab, Nab-paclitaxel, and Gemcitabine in Metastatic PC Patients (PanCAN-SR1)</a>	US	Pancreatic Cancer Action Network	Immuno-oncology	Imaging Mass Cytometry	Other outcome measure	N/A	Paul Oberstein	Novartis Pharmaceuticals	Recruiting	2020	2022	10	Phase 1	October 9, 2020

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NCT04588038	<a href="#">NT-17 for the Treatment of Recurrent Squamous Cell Carcinoma of Head and Neck Undergoing Surgery</a>	US	University of California, San Francisco	Immuno-oncology	Mass cytometry	Secondary outcome measure	N/A	Byunseok Kang	NeImmuneTech	Not yet recruiting	2020	2022	10	Phase 1	October 19, 2020
NCT04638582	<a href="#">Pembrolizumab as Neoadjuvant Therapy for Resectable Stage IA3 to IIA Non-Small Cell Lung Cancer (NSCLC)</a>	Canada	McGill University Health Centre/Research Institute of the McGill University Health Centre	Immuno-oncology	Imaging Mass Cytometry	Other outcome measure	N/A	Jonathan Spicer	none	Not yet recruiting	2021	2024	44	Phase 2	November 20, 2020
NCT04638751	<a href="#">ARGONAUT: Stool and Blood Sample Bank for Cancer Patients</a>	US	Persephone Biosciences	Oncology	Mass cytometry	Secondary outcome measure	N/A	Stephanie Culler	none	Recruiting	2020	2024	4000	N/A (observational)	November 20, 2020
NCT04652960	<a href="#">Duvelisib and Nivolumab for the Treatment of Stage IIB-IVB Mycosis Fungoides and Sezary Syndrome</a>	US	National Cancer Institute	Immuno-oncology	Mass cytometry	Other outcome measure	N/A	Neha Mehta-Shah	Yale University Cancer Center	Not yet recruiting	2021	2022	18	Phase 1	December 4, 2020
NCT04703244	<a href="#">Development of Patient Derived Xenografts (PDX) in Patients With Breast Cancer</a>	US	Mayo Clinic	Oncology	Mass cytometry	Secondary outcome measure	N/A	Judy C. Boughey and Matthew P. Goetz	none	Recruiting	2021	2042	100	N/A (observational)	January 11, 2021