Leukopaks from disease state human donors

High-quality, high volume, patient-centric leukapheresis products from our extensive network of research-ready study participants

AUTOIMMUNE CONDITIONS

Choose donors with **confirmed disease diagnosis**, demographics, annotated medical records and histories

CONSISTENCY

Obtain up to **10 billion PBMCs** cryopreserved from the same donor

QUALITY

Certificate of analysis documents cell viability, purity, immune cell subtype abundances, and collection data

RECALLABLE DONORS

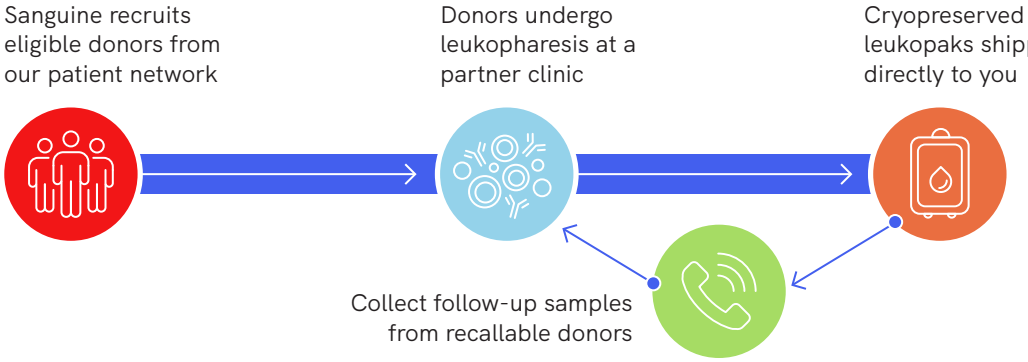
Strong relationships with a diverse, nationwide network of **60,000+ donors**

HLA typing

Clinical annotation

Infectious disease testing

Recallable donors



Apheresis-separated lymphocytes and monocytes (Leukopaks) collected from the same donor provide a reliable and consistent source of peripheral blood mononuclear cells (PBMCs) for biomarker, immunology, autologous, and allogeneic cell therapy research.[1,2] Not only can many therapy programs benefit from up to 10 billion PBMCs present in Leukopaks, but also from donor networks of recallable patients with annotated medical data.

To facilitate translational and clinical research, Sanguine Biosciences offers cryopreserved leukapheresis products for Research Use Only. Leukopaks are collected under an IRB-approved protocol from our growing nationwide network of 60,000+ research-ready and recallable study participants across multiple autoimmune disease states.

As the pioneer and leader in patient-centric, prospective, and nationwide human biospecimen procurement, Sanguine understands how streamlining sample accession expedites breakthroughs that benefit both patients and researchers. Our experienced team and patient network participants are committed to facilitating your research and deliver next-generation therapies.

Use Human Leukopaks for:

Assay validation | Process Development | Rare cell identification | Cell & Gene Therapy

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Prepare for data analysis with our additional sample characterization and processing capabilities, including:

- Human Leukocyte Antigen (HLA) typing
- Percent abundance characterization of immune cell subtypes
- Prospective collection of additional samples from the same patient

Disease states	▪ **Systemic Lupus Erythematosus** ▪ **Rheumatoid Arthritis** ▪ **Ulcerative Colitis** ▪ **Crohn's Disease**	▪ **Asthma** ▪ **Celiac Disease** ▪ **Multiple Sclerosis**
Use	Research Use Only (RUO)	
Collection method	Leukapheresis	
Collection size	▪ Full Leukopak (8-10 billion cells)	▪ Half Leukopak (4-6 billion cells)
Same-day delivery availability	Available in select geographies	
Cell viability measurement	Fluorescent-based cell counting	
Compliance validation	Clinical quality management system	
Cryopreservation	▪ Same-day cryopreservation in serum-free media (CryoStor CS-10) ▪ Controlled-rate freezing and transferred to long-term storage in LN_2 ▪ Shipped on dry ice overnight via specialty courier	

Example Publications using PBMCs from Sanguine:

Cell

Profiling SARS-CoV-2 HLA-I peptidome reveals T cell epitopes from out-of-frame ORFs
Potential peptide epitopes not captured by current Covid-19 vaccines elicit robust T cell responses in Covid-19 patients.[3]

nature communications

Checkpoint inhibition through small molecule-induced internalization of programmed death-ligand 1
A novel PD-L1 inhibitor stimulated immune cell responses in donor PBMCs from HBV-positive (T cells) and HBV-vaccinated (B cells) patients.[4]

Ask us about our growing network of 60,000+ research-ready study participants

[1]Mackensen A et al. (2022) Anti-CD19 CAR T cell therapy for refractory systemic lupus erythematosus. *Nat. Med.* Sep 15. DOI: 10.1038/s41591-022-02017-5.
[2]Rodell CB, Koch PD, Weissleder R. (2019) Screening for new macrophage therapeutics. Theranostics. 9(25): 7714–7729.
[3]Weingarten-Gabbay S et al. (2021) Profiling SARS-CoV-2 HLA-I peptidome reveals T cell epitopes from out-of-frame ORFs. *Cell.* 184:3962–3980.
[4]Park J-J et al. (2021) Checkpoint inhibition through small molecule-induced internalization of programmed death-ligand 1. *Nat. Commun.* 12:1222.

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