DEVELOP YOUR CANCER IMMUNOTHERAPY

With Tools That Fit Your Workflow

Developing cancer immunotherapies can be complex, but with the right tools you can maximize your efficiency and progress your research faster. From sourcing your starting cells to conducting downstream analysis, explore our tools and resources that work together seamlessly, enabling you to establish optimized workflows that help streamline your immunotherapy research.

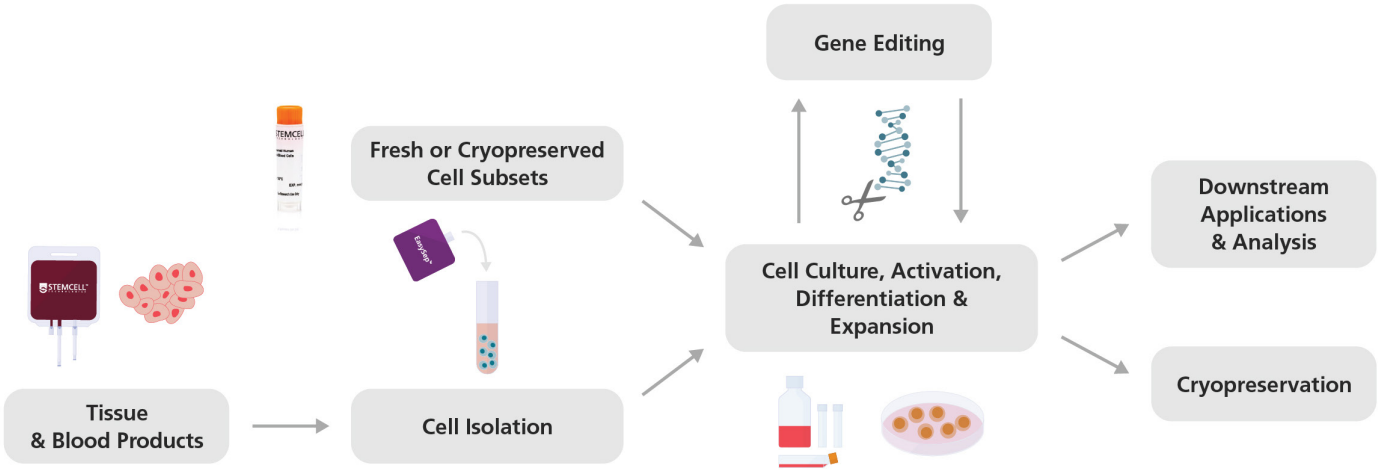


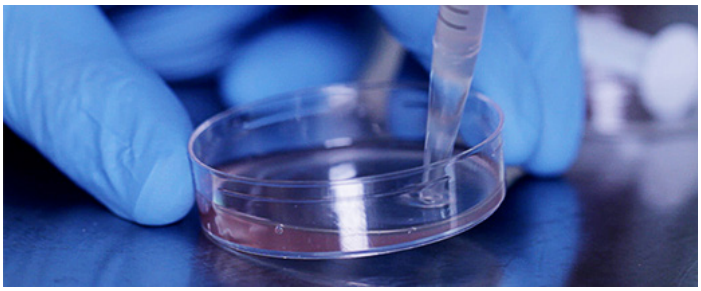
Figure 1. Cancer Immunotherapy Research Workflow Example

Source Healthy and Diseased Cells

Start your experiments with our reliable supply of high-quality, ethically-sourced primary cells. Choose from a wide range of healthy-donor fresh or frozen primary cells isolated from cord blood, bone marrow, peripheral blood, and mobilized peripheral blood. We also provide cells from donors with cancer, including fresh leukopaks, fresh whole blood, and frozen peripheral blood mononuclear cells.

View our healthy and diseased cells
www.stemcell.com/primary-and-cultured-cells

Dissociate Your Tissue Samples



Preparing single-cell suspensions from normal or tumor tissue samples prior to cell isolation helps you maintain high cell viability, minimize cell debris, and preserve cell surface antigens for antibody analysis.[1] Explore our tissue dissociation reagents that enable you to prepare single-cell suspensions with ease and are verified to work with our cell isolation reagents.

Explore our tissue dissociation reagents
www.stemcell.com/tissue-dissociation-reagents

Isolate Tumor Infiltrating Leukocytes

Isolate highly purified tumor infiltrating leukocytes (TILs) from tumor samples using EasySep™, a fast and easy-to-use technology that isolates cells without the need for columns. Isolated cells are immediately available for downstream applications such as cell culture, flow cytometry, and cell-based experiments.

View our EasySep™ products for TIL isolation
www.stemcell.com/tils-isolation

Isolate Immune Cells, Circulating Tumor Cells, and More

Efficiently isolate a wide range of cell types from a variety of sources using EasySep™ or RosetteSep™. With these technologies, you can obtain circulating tumor cells, $CD8^+$ T cells, natural killer (NK) cells, B cells, dendritic cells, and more. To automate your EasySep™ cell isolations, explore our RoboSep™ instruments.

Explore our EasySep™ and RosetteSep™ products for cell isolation
www.stemcell.com/cell-isolation

Activate, Expand, and Differentiate Your Immune Cells

Consistently activate, expand, and differentiate various cell types including T cells, NK cells, B cells, dendritic cells, monocytes, and macrophages using ImmunoCult™. These products provide serum-free and xeno-free culture conditions optimized to promote high cell yield and frequency for downstream applications.

Explore our ImmunoCult™ products for cell culture
www.stemcell.com/cell-culture

Modulate Immune and Tumor Cell Activity

Activate, expand, and differentiate both immune and tumor cells to gain new immunotherapy insights, with cytokines, chemokines, and growth factors from STEMCELL Technologies. Ensure consistency and reproducibility with over 200 individual human, mouse, and rat cytokines to choose from.

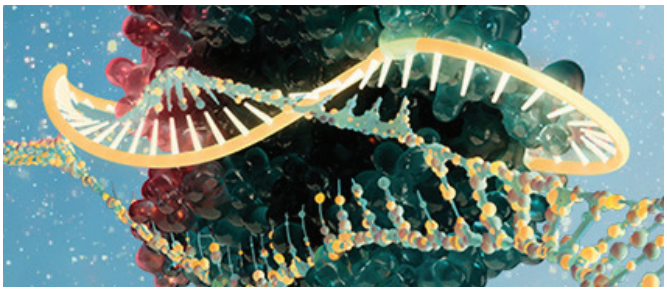
View our cytokine portfolio for modifying cell activity
www.stemcell.com/cytokines-and-proteins

Generate Immune Cells from Stem Cells

Differentiate human pluripotent stem cells (hPSCs) or CD34⁺ hematopoietic stem and progenitor cells (HSPCs) into immune cells—in serum-free culture conditions and without the use of stromal cells. STEMdiff™ kits facilitate the differentiation of hPSCs into T cells, NK cells, monocytes, or microglia, while StemSpan™ kits can differentiate CD34⁺ HSPCs into T cells or NK cells.

View our StemSpan™ and STEMdiff™ products for cell differentiation
www.stemcell.com/cell-differentiation

Genetically Engineer Your Immune Cells



Genetically modify your immune cells with ArciTect™ , a CRISPR-Cas9 genome editing system that enables you to edit difficult-to-manipulate cell types, such as T cells, NK cells, and CD34⁺ hPSCs. Our ready-to-use purified Cas9 proteins and synthetic guide RNAs allow you to efficiently generate functional gene-edited cells in your own lab.

Explore our ArciTect™ products for genome editing
www.stemcell.com/gene-editing

Accurately Detect and Quantify Proteins

Accurately detect and quantify a wide range of proteins such as cytokines, immunoglobulins, and hormones using our highly sensitive ELISA kits. These complete and ready-to-use kits ensure low intra- and inter-assay variability, enabling consistency within and between experiments.

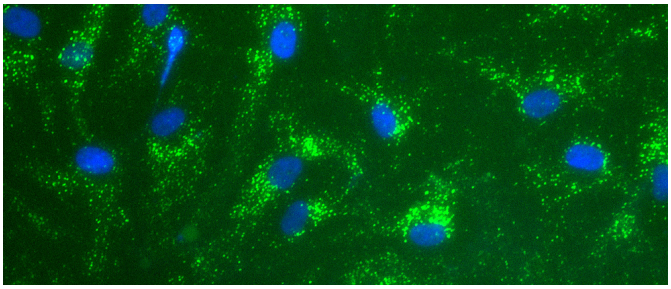
View our ELISAs for analyzing protein expression
www.stemcell.com/elisa-kits

Conduct Downstream Cell Analyses

Choose from a wide range of primary and secondary antibodies that are verified to work with our cell isolation and cell culture reagents. Our antibodies ensure that your downstream cell analyses, including phenotyping and purity assessments, are both valid and consistent.

Explore our antibodies for conducting cell analyses
www.stemcell.com/antibodies-for-analysis

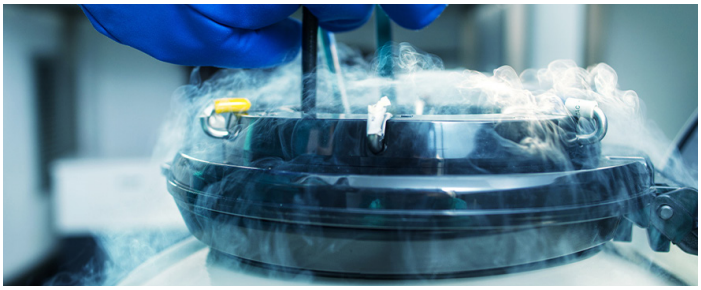
Stain Your Immune and Tumor Cells



Stain your immune and tumor cells with fluorescent dyes to assess cell viability, track cell proliferation, understand complex cell-to-cell interactions, and more. Explore a variety of cell dyes that ensure high fluorescence intensity and can be used for several applications, including flow cytometry and intracellular staining protocols.

View our fluorescent dyes for cell staining
www.stemcell.com/cell-dyes

Reliably Cryopreserve and Thaw Your Cells



Reduce the level of cryopreservation-induced cell death and maximize post-thaw cell recovery, viability, and function following cryopreservation, with our ready-to-use cryopreservation media. For reproducible thawing of your immune cells, explore the ThawSTAR® Automated Thawing System.

Explore our cryopreservation and cell thawing systems
www.stemcell.com/cryopreserve-and-thaw

Explore a collection of scientific resources for your immuno-oncology research, including videos, webinars, scientific wallcharts, and interviews in our Immuno-Oncology Learning Center.

www.immuno-oncology-resources.com

Organoids for Cancer Research

Cancer-derived organoids have several applications, including activating and expanding tumor-reactive T cell populations, predicting patient-specific treatment outcomes, and screening potential therapeutics.[2,3]

Generate physiologically relevant, three-dimensional (3D), cancer-derived models with IntestiCult™ and PancreaCult™ organoid growth media.

View our products at
www.cancer-organoids.com.

References

1. Khan M et al. (2016) Immunophenotypic characterization of ovine mesenchymal stem cells. Cytometry Part A 89(5): 443–50.
2. Dijkstra K et al. (2018) Generation of tumor-reactive T cells by co-culture of peripheral blood lymphocytes and tumor organoids. Cell 174(6): 1586–98.
3. Vlachogiannis G et al. (2018) Patient-derived organoids model treatment response of metastatic gastrointestinal cancers. Science 359(6378): 920–6.