# EasySep<sup>™</sup> Technology

Overview

Presenter LU LU SCIENTIFIC SUPPORT SPECIALIST, IMMUNOLOGY





#### **Learning Objectives**

In this session, you will learn:

- What EasySep<sup>™</sup> Cell Separation technology is
- <u>What EasySep™ strategies are available</u>
- What cells can be isolated with EasySep™
- <u>How to choose an EasySep™ product for your isolation</u>



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### What Is EasySep™?

- EasySep<sup>™</sup> is a column-free, immunomagnetic cell separation technology.
- It allows isolation of virtually any cell type from a variety of sources efficiently.
- It can also be used for pre-enrichment and depletion.
- It can be automated.
- It is compatible with downstream applications such as flow cytometry, DNA/RNA analysis, cell culture, and cell-based experiments.













#### EasySep<sup>™</sup> Strategies

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#### **EasySep™ Positive and Negative Selection**





#### **EasySep™ Release**





#### **EasySep™ Direct**





Cell Types That Can Be Isolated with EasySep™ Kits



### **EasySep™ Kits Available for Isolating Human Cells**

Human	:05
Typical sample sources:	PBMCs, leukopaks, whole blood
Kit components:	Anti-human selection cocktail, magnetic particles
Available strategies:	Positive, negative (including EasySep™ Direct), release
Cell types:	B cells, T cells, monocytes, NK cells, DCs, granulocytes, hematopoietic progenitor cells, innate lymphoid cells, and more.
Others:	Dead cell removal, extracellular vesicle selection, and total nucleic acid extraction



### **EasySep™ Kits Available for Isolating Mouse Cells**

Mouse	·es
Typical sample sources:	Spleen, bone marrow
Kit components:	Anti-mouse selection cocktail, magnetic particles, FcR blockers
Available strategies:	Negative, positive, release
Cell types:	B cells, T cells, monocytes, NK cells, DCs, granulocytes, hematopoietic progenitor cells, innate lymphoid cells, etc.
Others:	Dead cell removal, extracellular vesicle selection, and total nucleic acid extraction



#### **EasySep™ Kits Available for Other Species**





### **EasySep™ Kits Available for Other Cell Types and Species**

Isolate virtually any cell type you want.

- EasySep<sup>™</sup> or EasySep<sup>™</sup> Release Indirect Selection Kits
  - The selection cocktails target conjugates on the antibodies, including biotin, PE, APC, and FITC.
  - Positive selection can be used for unwanted cell depletion.
- EasySep™ "Do-It-Yourself" Positive Selection Kits
  - Mix your own mouse IgG1 monoclonal antibody with the "Do-It-Yourself" Component A and B to construct your own selection cocktail.
  - Positive selection can be used for unwanted cell depletion.



### **EasySep™ Kits Available for Other Cell Types and Species**

Isolate virtually any cell type you want.

- EasySep<sup>™</sup> Mouse Streptavidin RapidSpheres<sup>™</sup> Isolation Kit
  - Label single or multiple unwanted cell types with your own biotinylated antibodies and remove them with Streptavidin RapidSpheres<sup>™</sup>.
  - Should be used for mouse splenocytes or other tissues.
  - Negative Selection.

#### • EasySep™ Custom Kits

- Work with us to build a custom kit for isolating your cell type of interest.
- Available for both positive and negative selection.



## **EasySep™ for Isolating Multiples Cell Types**

EasySep<sup>™</sup> kits can be used sequentially to isolate multiple cell types from a single sample.

Sequential isolation avoids dividing the sample and usually provides higher recovery.

Considerations for designing a sequential isolation

- Start with positive selection of the rarest cell type.
- Positive selection of more than one rare cell type (starting frequency <10%) should be avoided.
- Positive selection can only be used with cells that are not magnetically labeled.
- The first negative fraction of a positive selection should be used for subsequent cell isolations.



#### Example of sequential isolation: isolation of B cells, T cells, myeloid cells, and NK cells

General Guidelines for Choosing an EasySep<sup>™</sup> Product



#### How to Choose an EasySep<sup>™</sup> Product for Your Isolation

- We are here to help!
- Consider the starting sample:
  - Match the species with the EasySep<sup>™</sup> product.
  - The compatibility between the starting sample type and the EasySep™ product.
- Consider the downstream applications:
  - If the cells need to be untouched  $\rightarrow \text{EasySep}^{\textcircled{\mbox{Negative selection}}}$
  - If the cells need to be free of particles → EasySep™Negative or EasySep™ Release selection
  - If recovery is more important  $\rightarrow EasySep^{TM}$  Negative selection
  - If purity is more important  $\rightarrow \text{EasySep}^{\text{TM}}$  Positive selection
- Check brochures on our website for the target cell type for suggestions.



#### **Summary**

- EasySep<sup>™</sup> is a fast and easy, column-free, immunomagnetic cell separation technology. In addition to selecting target cells, it can also be used for pre-enrichment and cell depletion. It is compatible with downstream applications such as flow cytometry, DNA/RNA analysis, cell culture, and cell-based experiments.
- Multiple selection strategies are available for EasySep<sup>™</sup>, including negative selection and positive selection, and their variants, EasySep<sup>™</sup> Direct and EasySep<sup>™</sup> Release.
- There are many optimized, off-the-shelf EasySep™ kits available for human, mouse, rat, and non-human primate cell isolation.
- With EasySep<sup>™</sup> Indirect, "Do-It-Yourself", and Custom kits, EasySep<sup>™</sup> allows isolation of virtually any cell type from a variety of sources.
- EasySep<sup>™</sup> kits can also be used for sequential isolation to isolate multiple cell types from a single sample.
- Consider the sample type and downstream applications when choosing an EasySep<sup>™</sup> product for separation.



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