

ONE-STEP CELL ENRICHMENT DIRECTLY FROM WHOLE BLOOD

ROSETTESEP[®] FEATURES

HIGH RECOVERY

No post-Ficoll[™] cell losses.

NEGATIVE SELECTION

Cells are unlabeled and ready for immediate use.

UNTOUCHED CELLS

Yield high-quality RNA and DNA for molecular studies.³⁻⁵

FLEXIBLE

Process large or small volumes and multiple samples simultaneously.

SAFE

Minimal sample handling.



SIMPLE. FAST. EASY.

- No Magnets
- No Columns
- No Special Equipment

Just a 20 minute incubation at room temperature prior to a standard Ficoll[™] spin.

KITS AVAILABLE FOR:

T cells, CD4⁺ T cells, CD8⁺ T cells, B cells, Total lymphocytes, Multiple myeloma cells, Monocytes, Progenitors, Circulating epithelial cells, Granulocytes, Mesenchymal stem cells, and more...

PLUS DEPLETION OF:

Granulocytes, Monocytes, IgE-bearing cells, T cells & subsets.

WHAT IS RosetteSep® ?

RosetteSep® is a rapid cell separation procedure for the isolation of highly purified cells directly from human whole blood (Figure 1). RosetteSep® turns a **simple density centrifugation** step into a specific antibody-mediated cell enrichment procedure with STEMCELL's tetrameric antibody complex (TAC) technology (Figure 3). The RosetteSep® cocktail **crosslinks unwanted cells to multiple red blood cells** already present in the sample, forming immunorosettes (Figure 2 & 3). When centrifuged over the appropriate density medium (e.g. Ficoll™), the **unwanted (rosetted)** cells pellet along with the red blood cells, leaving the **desired cells untouched and highly enriched** at the density medium: plasma interface (Figure 1). Desired cells never labeled with antibody and are immediately ready for any application.

FIGURE 1: RosetteSep® Procedure

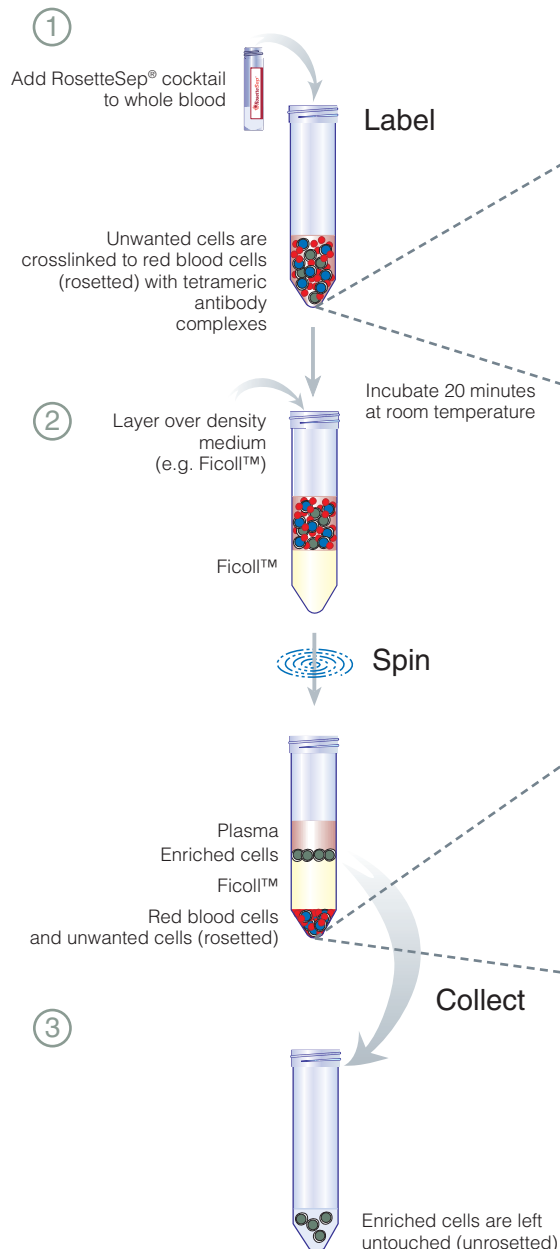


FIGURE 2: Picture of a Blood Sample After Addition of the RosetteSep® Cocktail, and Prior to Centrifugation Over Ficoll™. Magnification 400X

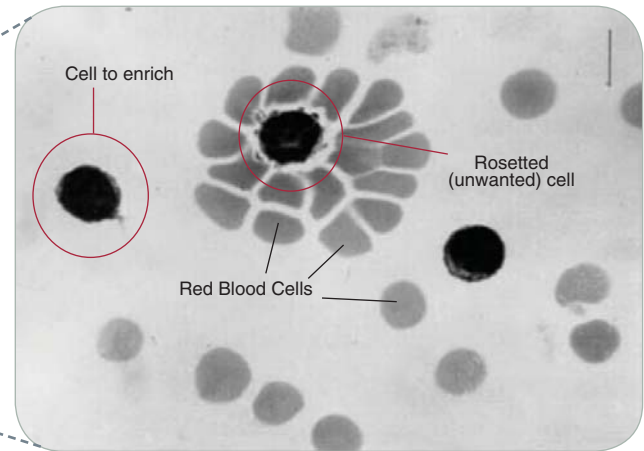
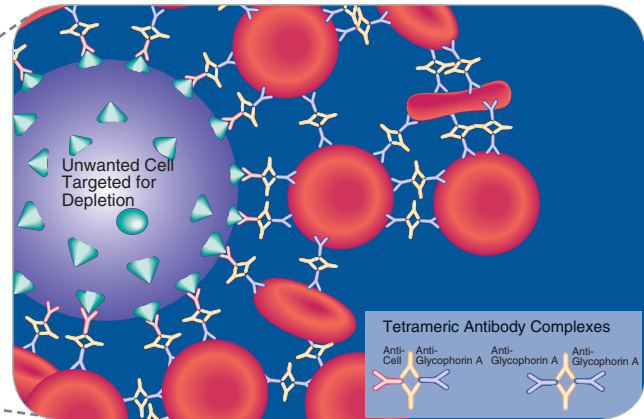


FIGURE 3: Illustration Showing Rosette of Unwanted Cell and RBCs Formed by RosetteSep® Tetrameric Antibody Complexes



Ask us about a  RosetteSep® demonstration in your lab!

POWERFUL CELL SEPARATION WITH A SIMPLE SPIN

EXAMPLES OF RosetteSep® APPLICATIONS

COCKTAILS CAN BE USED DIRECTLY WITH BD VACUTAINER® CPT™ - CELL PREPARATION TUBES

BD Vacutainer® CPT™ - Cell Preparation Tubes* are evacuated blood collection tubes, containing a density gradient liquid below a gel insert, and an anticoagulant above. The RosetteSep® procedure can be performed directly in the CPT, minimizing sample manipulation. The gel insert in the CPT keeps the sample and the density gradient layer apart before and after centrifugation, avoiding the layering step and facilitating removal of the enriched cells. To perform a RosetteSep® separation in a CPT, the RosetteSep® cocktail is added to the blood sample directly in the CPT. After incubation and centrifugation, the enriched cells are recovered by pipetting or pouring from the CPT. This approach may be advantageous when minimal sample handling is preferred, such as when processing infectious samples.

*Available from BD (www.vmdp.com) BD Vacutainer® and CPT™ are trademarks of Becton, Dickinson and Company.

ISOLATE SPECIFIC T CELL SUBSETS:

EXAMPLE – REGULATORY CD4⁺CD25⁺ T CELLS

CATALOG #15862

To isolate CD4⁺CD25⁺ T cells, first enrich CD4⁺ T cells with RosetteSep®, then select CD4⁺CD25⁺ T cells using EasySep® CD25 Selection Cocktail (immunomagnetic cell selection without columns). Activated non-CD4⁺ T cells are removed during the RosetteSep® procedure prior to CD25 positive selection. For more information on EasySep®, please visit http://www.stemcell.com/product_catalog/easysep.aspx.

WORKS WITH ANY RED BLOOD CELL CONTAINING SAMPLE

RosetteSep® can be used with samples other than whole blood. With the appropriate procedure, cells can be enriched from buffy coat, bone marrow, cord blood, leukapheresis, and spleen.

QUICK AND EASY GRANULOCYTE DEPLETION

CATALOG #15624

RosetteSep® Granulocyte Depletion reagent can be used to eliminate granulocytes from older blood samples.

SAFE HANDLING FOR HIV RESEARCH

HIV research often requires cell isolation procedures that minimize sample handling. RosetteSep® is a safe and easy to use tool for the separation of whole blood with minimal sample handling that avoids cross-contamination of samples and minimizes exposure to virus.²

ISOLATE CELLS FOR MACROPHAGE RESEARCH

CATALOG #15624

Cell separation with RosetteSep® produces unlabelled cells that can be used in any application. Monocytes isolated with RosetteSep® (Catalog #15028) are untouched and immediately ready to be differentiated into macrophages.⁶

ISOLATE CELLS FOR HLA ANALYSIS

After RosetteSep® enrichment, cells are immediately usable for serological HLA testing, chimerism and flow crossmatch analysis. Because RosetteSep® does not interfere with subsequent analysis and is gentle on cells, this procedure can reduce the risk of false positive data in HLA applications.

KITS FOR SPECIALIZED ROSETTESEP® APPLICATIONS

LYMPHOID & MYELOID ENRICHMENT KITS FOR LINEAGE-SPECIFIC CHIMERISM ANALYSIS

CATALOG #15271HLA (Lymphoid)

CATALOG #15272HLA (Myeloid)

These kits for monitoring engraftment after transplants provide sufficient enrichment cocktail and specially designed density medium to perform 20 tests.

CORD BLOOD PROGENITOR ENRICHMENT KIT

CATALOG #15276

This kit allows the routine enrichment of hematopoietic progenitors from large volumes of cord blood samples. One kit can process up to 500 mL of cord blood.

RosetteSep[®] PRODUCT LISTING

Human Negative Selection

CELL ENRICHMENT COCKTAILS	CATALOG #	
	TO LABEL 40 ML OF BLOOD	TO LABEL 200 ML OF BLOOD
T Cells	15021	15061
CD4 ⁺ T Cells	15022	15062
CD8 ⁺ T Cells	15023	15063
CD4 ⁺ CD25 ⁺ Regulatory T Cells	-	15862
B Cells	15024	15064
NK Cells	15025	15065
Total Lymphocytes	15223	15263
Monocytes	15028	15068
Granulocytes**	15121	15161
Progenitor Cells from Cord Blood	15026	15066
De-Bulking Cord Blood for Freezing	15126	15166
Progenitor Cells from Bone Marrow	15027	15067
Mesenchymal Stem Cells from Bone Marrow	15128	15168
Multiple Myeloma (B and Plasma) Cells from Bone Marrow	15129	15169
Circulating Epithelial Tumor Cells (Extensive Enrichment)	15127	15167
Circulating Epithelial Tumor Cells (CD45 Depletion)	15122	15162
Any Cells (Custom)	15309	-
CELL DEPLETION COCKTAILS*	TO LABEL 40 ML OF BLOOD	TO LABEL 200 ML OF BLOOD
CD3 ⁺ Cell Depletion	15621	15661
CD4 ⁺ Cell Depletion	15622	15662
CD8 ⁺ Cell Depletion	15623	15663
Granulocyte Depletion (CD66b)	15624	15664
Monocyte Depletion (CD36)	15628	15668
IgE Depletion	15230	-
HLA COCKTAILS	TO LABEL 250 ML OF BLOOD	TO LABEL 1000 ML OF BLOOD
T Cell Enrichment	15061HLA	15081HLA
B Cell Enrichment	15064HLA	15084HLA
Total Lymphocyte Enrichment	15263HLA	15283HLA
Lymphoid Enrichment	15271HLA	-
Myeloid Enrichment	15272HLA	-
Granulocyte Depletion	15664HLA	15684HLA
SUPPORT REAGENTS	100 ML	500 ML
Ficoll-Paque™ Plus	07907	07957
RosetteSep [®] DM-L	15705	-
RosetteSep [®] DM-M	15725	-
HetaSep [®]	07906	-

*Can be added to a standard RosetteSep[®] cocktail, if not already present

**Kit contains the required density medium

RosetteSep[®] CUSTOM COCKTAILS CATALOG #15309

In addition to our standard RosetteSep[®] cocktails, custom cocktails may be easily prepared to meet your unique cell separation needs. RosetteSep[®] custom cocktails have been used by researchers to enrich various cell subsets, such as: **T cells⁵, naïve, memory, or resting T cells, dendritic cells**, etc.

Anti-Human Antibodies Available For Use in Custom Cocktails

CD2, CD3, CD4, CD5, CD8, CD10, CD11b, CD14, CD15, CD16, CD19, CD20, CD24, CD25, CD27, CD29, CD33, CD34, CD36, CD38, CD41, CD45, CD45RA, CD45RO, CD56, CD66b, CD66e, CD69, CD124, HLA-DR, IgE, breast carcinoma, and TCR.

Other antibodies are available upon request.

RosetteSep[®] is an extremely flexible system, which can also be used with your own "in-house" IgG, mouse monoclonal antibodies.

Design your own custom cocktails or contact us for assistance in optimizing your cell separations.

SELECTED RosetteSep[®] PUBLICATIONS

(WITH REPORTED PURITIES WHERE AVAILABLE)

- Vivier *et al.*, *Blood* 111: 5008-5016, 2008. **NK cell** enrichment for functional studies.
- Neil *et al.*, *Nature* 451: 425-430, 2008. **CD4⁺ T cell** enrichment for functional HIV studies. Purity >90%.
- Cobb *et al.*, *Proc Natl Acad Sci USA* 102: 4801-4806, 2005. **T cell** and **monocyte** enrichment for microarray analysis. Purity 80-95%.
- Rouhianinen *et al.*, *Blood* 104: 1174-1182, 2004. **Monocyte** enrichment for cell migration and RT-PCR studies.
- Sasaki *et al.*, *Blood* 105: 1204-1213, 2005. **CD4⁺ T cell** enrichment for microarray analysis. Purity >90%.
- Kohler *et al.*, *J Leuko Biol* 73: 407-416, 2003. **Monocyte** enrichment for culture and differentiation into macrophages
- Dyugovskaya *et al.*, *Am J Respir Crit Care Med* 168: 242-249, 2003. **γδ T cell** enrichment for functional and molecular studies.
- Poggi *et al.*, *J Immunol* 174: 2653-2660, 2005. **NK cell** enrichment for functional and molecular studies.
- Frelin *et al.*, *Blood* 105: 804-811, 2005. Hematopoietic progenitor cell enrichment for cytotoxicity studies.
- Castriconi *et al.*, *Proc Natl Acad Sci USA* 101: 12640-12645, 2004. **Neuroblastoma cell** enrichment from bone marrow for molecular characterization studies; **NK cell** enrichment for functional studies.
- Parsons *et al.*, *Blood* 104: 2736-2738, 2004. **Mesenchymal stem cell** enrichment from fetal bone marrow for culture and virus susceptibility studies. Purity >99% after 4 days culture.
- Vasir *et al.*, *J Immunol* 174: 2376-2386, 2005. **T cell** and **B cell** enrichment for cytokine activation studies. Purity 95-97% (T cell), >90% (B cells).

SELECTED ASHI ABSTRACTS FOR HLA ANALYSIS

- Dunn DM, Thurmon MN, Sybert CL: Cell preparation that can be used for serological **HLA typing**, crossmatching, and flow crossmatching. ASHI Abstract #79, 2003
- Gautreaux MD, Haywood MJ, James CM, White CD: Evaluation of RosetteSep[®] with modification of test protocol to increase yield and reduce red blood cell contamination. ASHI Abstract #120, 2003
- Martin C, McKie J, Hazy L, Shumway W, LeFor W: Purified T and B cell preparations obtained using RosetteSep cell isolation reagents: suitability for use in cytotoxic assays. ASHI Abstract #96, 2002