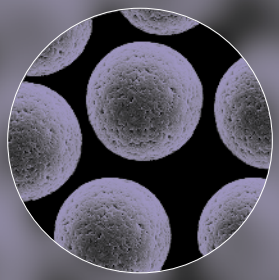
Flexibility in Cell Isolation



Introduction

Add your own biotinylated antibody to proven streptavidin-coated Dynabeads® to isolate any cell type from any sample from any species for any downstream application. This tube-based method is quick, easy and very flexible.

- **Quick and easy**
- **Flexible system**
- **Reproducible**
- **Binds any biotinylated target**

Any cell type: use any biotinylated antibody…
Any species: human, mouse, rat, non-human primates…
Any sample: whole blood, bone marrow, tissue digests, spleen…
Any application: cells are ideal for culture, stimulation, DNA/RNA or protein purification, flow cytometry…

Whatever cell type you want to isolate, we have the product for you!

One system – no limits!

What you want to achieve from your isolation will decide which product is best for you:

- **Isolate untouched cells (negative isolation or depletion)**
  Label the cells with your own biotinylated antibody mix and then add **Dynabeads® Biotin Binder** to your starting sample to bind unwanted cell types. Use a handy Dynal magnet to pull the unwanted cells to the tube wall, leaving a high purity and yield of untouched, viable cells in the supernatant. Batch-to-batch variations (fig. 2) and donor variations (fig. 3) are minimal.
- **Isolate bead-free cells (positive isolation with detachment)**
  Use **CELLection™ Biotin Binder** with your own biotinylated antibody (direct or indirect technique) to bind your target cell type. Use a handy Dynal magnet to pull the target cells to the tube wall, leaving the unwanted cells in the supernatant. After isolation, the beads are detached from the cells by cleaving the DNase linker (reagent supplied).

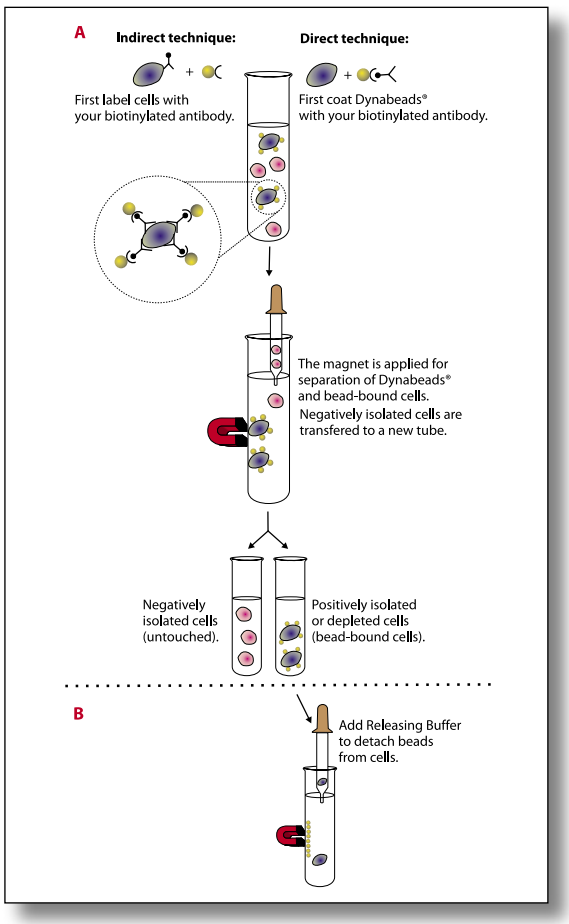


Fig. 1: The principle of cell isolation using Dynabeads® Biotin Binder (A) and CELLection™ Biotin Binder (A+B). *Isolated target cells can only be detached from beads wih CELLection™ Biotin Binder.*

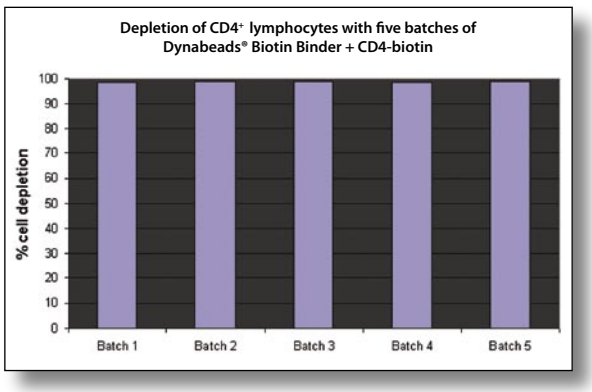


Fig. 2: Batch-to-batch variations*. Depletion of human CD4⁺ T cells from MNC performed by direct technique with 5 different Dynabeads® Biotin Binder batches. The same batch of primary biotinylated CD4 antibody is used in all samples. The average depletion of CD4⁺ lymphocytes is 98.6% with standard deviation (SD) of ±0.2.*

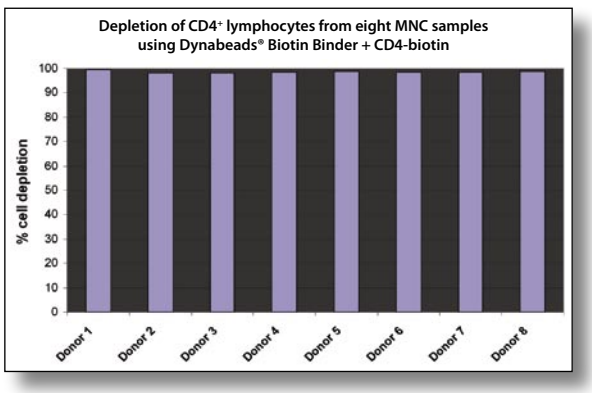


Fig. 3: Donor variations. *Depletion of human CD4⁺ T cells from MNC of 8 different donors performed on 8 different days with the same Dynabeads® Biotin Binder batch. The average depletion of CD4⁺ lymphocytes is 98.6% with SD of ±0.5.*

Here are some examples of how these products have been used in a variety of applications – the possibilities are endless!

Human Virion and HIV-1 Infected Cell Enrichment
Callahan MK *et al* (2003) Phosphatidylserine on HIV envelope is a cofactor for infection of monocytic cells. J. Imm. 170: 4840–4845. **Uses Dynabeads® Biotin Binder.**

Human B Cells
Faili A *et al* (2002) AID-dependent somatic hypermutation occurs as a DNA single-strand event in the BL2 cell line. Nat. Imm. 3:815-821. **Uses Dynabeads® Biotin Binder.**

Human Antigen-specific T Cells
Landais E *et al* (2004) Direct killing of Epstein-Barr virus (EBV)–infected B cells by CD4 T cells directed against the EBV lytic protein BHRF1. Blood 103:1408-1416. **Uses Dynabeads® Biotin Binder.**

Mouse Bone Marrow Cells
Almeida ARM *et al* (2002) Homeostasis of peripheral $CD4^+$ T cells: IL-2Rα and IL-2 shape a population of regulatory cells that controls $CD4^+$ T cell numbers. J. Imm. 169: 4850-4860. **Uses Dynabeads® Biotin Binder.**

Mouse Lin^- Cells
Erlich S *et al* (1999) Fluorescence-based selection of gene-corrected hematopoietic stem and cells from acid sphingomyelinase-deficient mice: Implications for Niemann-Pick disease gene therapy and the development of improved stem cell gene transfer procedures. Blood 93: 80-86. **Uses Dynabeads® Biotin Binder.**

Askenasy N *et al* (2003) Cardiac allograft acceptance after localised bone marrow transplantation by isolated limb perfusion in non-myeloablated recipients. Stem Cells 21: 200-207. **Uses CELLection™ Biotin Binder.**

Mouse T Cells
Galkina E *et al* (2003) L-selectin shedding does not regulate constitutive T cell trafficking but controls the migration pathways of antigen-activated lymphocytes. J. Exp. Med. 198: 1323–1335. **Uses Dynabeads® Biotin Binder.**

Hamad ARA *et al* (2001) Lack of coreceptor allows survival of chronically stimulated double-negative α/β T Cells: Implications for autoimmunity J. Exp. Med. 193: 1113-1121. **Uses Dynabeads® Biotin Binder.**

Mouse Lin^+ Cells
Otsu M *et al* (2002) Reconstitution of lymphoid development and function in ZAP-70–deficient mice following gene transfer into bone marrow cells. Blood 100: 1248-1256. **Uses Dynabeads® Biotin Binder.**

Mouse Dendritic Cells
Sevilla N *et al* (2000) Immunosuppression and resultant viral persistence by specific viral targeting of dendritic cells. J. Exp. Med. 192: 1249–1260. **Uses Dynabeads® Biotin Binder.**

Mouse CD11b Cells
Zhang TY *et al* (2005) The expression of 11β-hydroxysteroid dehydrogenase type I by lymphocytes provides a novel means for intracrine regulation of glucocorticoid activities. J. Imm. 174: 879–889. **Uses Dynabeads® Biotin Binder.**

Mouse $CD8^+$ T Cells
Chapdelaine Y *et al* (2003) Increased $CD8^+$ T cell memory to concurrent infection at the expense of increased erosion of pre-existing memory: the paradoxical role of IL-15. J. Imm. 171: 5454-5460. **Uses CELLection™ Biotin Binder.**

Van Faasen H *et al* (2004) Prolonged antigen presentation, APC-, and $CD8^+$ T cell turnover during mycobacterial infection: comparison with listeria monocytogenes. J. Imm. 172: 3491-3500. **Uses CELLection™ Biotin Binder.**

Mouse NK Cells
Esplugues E *et al* (2003) Enhanced anti-tumour immunity in mice deficient in CD69. J. Exp. Med. 197: 1093-1106. **Uses CELLection™ Biotin Binder.**

Mouse T Cells from Lung
Revets H *et al* (2005) Lipoprotein I, a TLR2/4 ligand modulates Th2-driven allergic immune responses. J. Imm. 174:1097-1103. **Uses CELLection™ Biotin Binder.**

Mouse Synovial Tissue
Sancho D *et al* (2003) CD69 down-regulates autoimmune reactivity through active transforming growth factor-β production in collagen-induced arthritis. J. Clin.Invest. 112: 872-882. **Uses CELLection™ Biotin Binder.**

Mouse Regulatory T Cells
Taylor PA *et al* (2004) B7 expression on T cells down-regulates immune responses through CTLA-4 ligation via R-T interactions. J. Imm. 172: 34-39. **Uses CELLection™ Biotin Binder.**

Ordering Information

Product Name	Volume	Prod. No.
NEW Dynabeads® Biotin Binder	5 ml Processes 2 x 10^9 cells	110.47
CELLection® Biotin Binder	5 ml kit Processes 2 x 10^9 cells	115.33
Dynal MPC®-L	6 x 1-8 ml tubes	120.21
Dynal MPC®-15	1-15 ml tube	120.29
Dynal MPC®-50	15-50 ml tube	120.24

*Dynabeads® M-280 Streptavidin is intended for molecular applications but has also been used for many years for cell isolation. Dynabeads® Biotin Binder contains the same beads with a concentration and protocol more suitable for cellular applications.

For flexible cell isolation choose Dynabeads® Biotin Binder or CELLection™ Biotin Binder - just add your own biotinylated antibody.

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