

EasySep™ Mouse CD11b Positive Selection Kit II

For processing 2 x 10⁹ cells from spleen or bone marrow

Catalog #18970

Positive Selection

Document #1000005377 | Version 01



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Description

Isolate highly purified CD11b+ cells from mouse splenocytes or bone marrow samples by positive selection.

- Fast and easy-to-use
- Up to 95% purity (for bone marrow, purity can be up to 99%)
- No columns required
- Isolated cells are not fluorochrome-labeled

This kit targets CD11b+ cells for positive selection with antibodies recognizing the CD11b surface marker. Desired cells are labeled with antibodies and magnetic particles, and separated without columns using an EasySep™ magnet. Unwanted cells are simply poured off, while desired cells remain in the tube. Isolated cells are immediately available for downstream applications such as flow cytometry, cell culture, and cell-based experiments.

NOTE: This is the Product Information Sheet (PIS) for isolating CD11b+ cells from mouse splenocytes or bone marrow samples. If isolating CD11b+ cells from mouse lung or brain tissues, refer to the applicable PIS, available at www.stemcell.com or contact us to request a copy.

Component Descriptions

COMPONENT NAME	COMPONENT #	QUANTITY	STORAGE	SHELF LIFE	FORMAT
EasySep™ Mouse CD11b Positive Selection II Component A	18970CA	1 x 0.5 mL	Store at 2 - 8°C. Do not freeze.	Stable until expiry date (EXP) on label.	A combination of monoclonal antibodies in PBS and 0.1% BSA.
EasySep™ Mouse CD11b Positive Selection II Component B	18970CB	1 x 0.5 mL	Store at 2 - 8°C. Do not freeze.	Stable until expiry date (EXP) on label.	A combination of monoclonal antibodies in PBS and 0.1% BSA.
EasySep™ Dextran RapidSpheres™ 50100	50100	2 x 1 mL	Store at 2 - 8°C. Do not freeze.	Stable until expiry date (EXP) on label.	A suspension of magnetic particles in water.
RoboSep™ Empty Vial	27401	1	Not applicable	Not applicable	Not applicable
Normal Rat Serum	13551	1 x 2 mL	Store at -20°C.	Stable until expiry date (EXP) on label.	Mycoplasma-free normal rat serum.

BSA - bovine serum albumin; PBS - phosphate-buffered saline

Components may be shipped at room temperature (15 - 25°C) but should be stored as indicated above.

Additional Reagent Stability Information

REAGENT NAME	STORAGE	SHELF LIFE
Selection Cocktail (combined Component A + Component B)	Store at 2 - 8°C. Do not freeze.	Stable for up to 4 weeks. Do not exceed the expiry date (EXP) of individual components.
Normal Rat Serum (in-use)	Store at 2 - 8°C.	Stable for at least 2 months. Do not exceed the expiry date (EXP) on label.

Sample Preparation

SPLEEN

Disrupt spleen in PBS containing 2% fetal bovine serum (FBS). Remove clumps and debris by passing cell suspension through a 70 µm mesh nylon strainer. Centrifuge at 300 x g for 10 minutes and pour off the supernatant. Resuspend the cell pellet in ~0.5 mL of PBS containing 2% FBS (without EDTA) per spleen. Add DNase I Solution (Catalog #07900) to a final concentration of 100 µg/mL and incubate for 10 minutes at room temperature (15 - 25°C). Count cells and resuspend in recommended medium (containing 1 mM EDTA) at 1×10^8 nucleated cells/mL.

Ammonium chloride treatment is not recommended when preparing the cells for separation.

BONE MARROW

Flush bone marrow cells from femur and tibia into recommended medium using a syringe equipped with a 23 gauge needle. Disperse clumps by gently passing the cell suspension through the syringe several times. Alternatively, crush bones using a mortar and pestle. Remove remaining clumps and debris by passing cell suspension through a 70 µm mesh nylon strainer. Centrifuge at 300 x g for 10 minutes and resuspend at 1×10^8 nucleated cells/mL in recommended medium.

LUNG OR BRAIN TISSUE

If processing lung or brain tissue, refer to the applicable PIS, available at www.stemcell.com or contact us to request a copy.

Recommended Medium

EasySep™ Buffer (Catalog #20144), RoboSep™ Buffer (Catalog #20104), or PBS containing 2% FBS and 1 mM EDTA. Medium should be free of Ca⁺⁺ and Mg⁺⁺.

Directions for Use – Manual EasySep™ Protocols

See page 2 for Sample Preparation and Recommended Medium. Refer to Tables 1 and 2 for detailed instructions regarding the EasySep™ procedure for each magnet.

Table 1. EasySep™ Mouse CD11b Positive Selection Kit II Protocol for SPLEEN or BONE MARROW

		EASYSEP™ MAGNETS	
STEP	INSTRUCTIONS	 EasySep™ (Catalog #18000)	 “The Big Easy” (Catalog #18001)
1	Prepare sample at the indicated cell concentration within the volume range.	1 x 10 ⁸ cells/mL 0.25 - 2 mL	1 x 10 ⁸ cells/mL 1 - 4 mL
2	Add Rat Serum to sample.	50 µL/mL of sample	50 µL/mL of sample
3	Add sample to required tube.	5 mL (12 x 75 mm) polystyrene round-bottom tube (e.g. Catalog #38007)	14 mL (17 x 95 mm) polystyrene round-bottom tube (e.g. Catalog #38008)
4	Prepare Selection Cocktail in a tube. For each 1 mL of sample make 50 µL of cocktail (25 µL of Component A + 25 µL of Component B).	Mix equal volumes of Component A and Component B. Prepared cocktail is stable at 2 - 8°C for up to 4 weeks.	Mix equal volumes of Component A and Component B. Prepared cocktail is stable at 2 - 8°C for up to 4 weeks.
	Incubate.		
5	Add Selection Cocktail to sample.	50 µL/mL of sample	50 µL/mL of sample
	Mix and incubate.	RT for 5 minutes	RT for 5 minutes
6	Vortex RapidSpheres™. NOTE: Particles should appear evenly dispersed.	30 seconds	30 seconds
7	Add RapidSpheres™ to sample.	80 µL/mL of sample	80 µL/mL of sample
	Mix and incubate.	RT for 3 minutes	RT for 3 minutes
8	Add recommended medium to top up the sample to the indicated volume. Mix by gently pipetting up and down 2 - 3 times.	Top up to 2.5 mL	<ul style="list-style-type: none"> • Top up to 5 mL for samples < 3 mL • Top up to 10 mL for samples ≥ 3 mL
	Place the tube (without lid) into the magnet and incubate.	RT for 3 minutes	RT for 5 minutes
9	Pick up the magnet, and in one continuous motion invert the magnet and tube,* pouring off the supernatant. Remove the tube from the magnet; this tube contains the isolated cells.	Discard supernatant	Discard supernatant
10	Repeat steps as indicated.	Steps 8 and 9, three more times (total of 4 x 3-minute separations)	Steps 8 and 9, three more times (total of 4 x 5-minute separations)
11	Resuspend cells in desired medium. Be sure to collect cells from the sides of the tube.	Isolated cells are ready for use	Isolated cells are ready for use

RT - room temperature (15 - 25°C)

* Leave the magnet and tube inverted for 2 - 3 seconds, then return upright. Do not shake or blot off any drops that may remain hanging from the mouth of the tube.

Table 2. EasySep™ Mouse CD11b Positive Selection Kit II Protocol for SPLEEN or BONE MARROW

		EASYSEP™ MAGNETS	
STEP	INSTRUCTIONS	EasyEights™ (Catalog #18103)	
		5 mL tube	14 mL tube
1	Prepare sample at the indicated cell concentration within the volume range.	1 x 10 ⁸ cells/mL 0.5 - 1.5 mL	1 x 10 ⁸ cells/mL 1 - 4 mL
2	Add Rat Serum to sample.	50 µL/mL of sample	50 µL/mL of sample
3	Add sample to required tube.	5 mL (12 x 75 mm) polystyrene round-bottom tube (e.g. Catalog #38007)	14 mL (17 x 95 mm) polystyrene round-bottom tube (e.g. Catalog #38008)
4	Prepare Selection Cocktail in a tube. For each 1 mL of sample make 50 µL of cocktail (25 µL of Component A + 25 µL of Component B).	Mix equal volumes of Component A and Component B. Prepared cocktail is stable at 2 - 8°C for up to 4 weeks.	Mix equal volumes of Component A and Component B. Prepared cocktail is stable at 2 - 8°C for up to 4 weeks.
	Incubate.	RT for 5 minutes	RT for 5 minutes
5	Add Selection Cocktail to sample.	50 µL/mL of sample	50 µL/mL of sample
	Mix and incubate.	RT for 5 minutes	RT for 5 minutes
6	Vortex RapidSpheres™. NOTE: Particles should appear evenly dispersed.	30 seconds	30 seconds
7	Add RapidSpheres™ to sample.	80 µL/mL of sample	80 µL/mL of sample
	Mix and incubate.	RT for 3 minutes	RT for 3 minutes
8	Add recommended medium to top up sample to the indicated volume. Mix by gently pipetting up and down 2 - 3 times.	Top up to 2.5 mL	<ul style="list-style-type: none"> • Top up to 5 mL for samples < 3 mL • Top up to 10 mL for samples ≥ 3 mL
	Place the tube (without lid) into the magnet and incubate.	RT for 10 minutes	RT for 10 minutes
9	Carefully pipette** (do not pour) off the supernatant. Remove the tube from the magnet; this tube contains the isolated cells.	Discard supernatant	Discard supernatant
10	Add recommended medium to top up sample to the indicated volume. Mix by gently pipetting up and down 2 - 3 times.	Top up to 2.5 mL	<ul style="list-style-type: none"> • Top up to 5 mL for samples < 3 mL • Top up to 10 mL for samples ≥ 3 mL
	Place the tube (without lid) into the magnet and incubate.	RT for 5 minutes	RT for 5 minutes
11	Repeat steps as indicated.	Steps 9 and 10 (total of 1 x 10-minute and 2 x 5-minute separations)	Steps 9 and 10 (total of 1 x 10-minute and 2 x 5-minute separations)
12	Resuspend cells in desired medium. Be sure to collect cells from the sides of the tube.	Isolated cells are ready for use	Isolated cells are ready for use

RT - room temperature (15 - 25°C)

** Collect the entire supernatant, all at once, into a single pipette (e.g. for EasyEights™ 5 mL tube use a 2 mL serological pipette [Catalog #38002]; for EasyEights™ 14 mL tube use a 10 mL serological pipette [Catalog #38004]).

Directions for Use – Fully Automated RoboSep™ Protocol

See page 2 for Sample Preparation and Recommended Medium. Refer to Table 3 for detailed instructions regarding the RoboSep™ procedure.

Table 3. RoboSep™ Mouse CD11b Positive Selection Kit II Protocol for SPLEEN or BONE MARROW

STEP	INSTRUCTIONS	RoboSep™ (Catalog #20000 and #21000)
1	Prepare sample at the indicated cell concentration within the volume range.	1 x 10 ⁸ cells/mL For spleen samples: 1 - 4 mL For bone marrow samples: 0.5 - 3 mL
	Add Rat Serum to sample.	50 µL/mL of sample
3	Add sample to required tube.	14 mL (17 x 95 mm) polystyrene round-bottom tube (e.g. Catalog #38008)
4	Prepare Selection Cocktail in the RoboSep™ Empty Vial provided. See Table 4 for required volumes.	Mix equal volumes of Component A and Component B (see Table 4). Prepared cocktail is stable at 2 - 8°C for up to 4 weeks.
	Incubate.	RT for 5 minutes
5	Select protocol.	<ul style="list-style-type: none"> • Mouse CD11b Positive Selection II 18970 Spleen • Mouse CD11b Positive Selection II 18970 Bone marrow
6	Vortex RapidSpheres™.	30 seconds
7	Load the carousel.	Follow on-screen prompts
	Start the protocol.	Press the green "Run" button
8	Unload the carousel when the run is complete. Remove the tube containing the isolated cells and resuspend in desired medium. Be sure to collect cells from the sides of the tube.	Isolated cells are ready for use

Table 4. RoboSep™ Selection Cocktail Preparation

START SAMPLE	COMPONENT A	COMPONENT B	SELECTION COCKTAIL TOTAL VOLUME
1 mL	75 µL	75 µL	150 µL
1.5 mL	87.5 µL	87.5 µL	175 µL
2 mL	100 µL	100 µL	200 µL
3 mL	125 µL	125 µL	250 µL
4 mL	150 µL	150 µL	300 µL

Note: RoboSep™ requires an excess of the Selection Cocktail to run properly (as indicated above).

Notes and Tips

ASSESSING PURITY

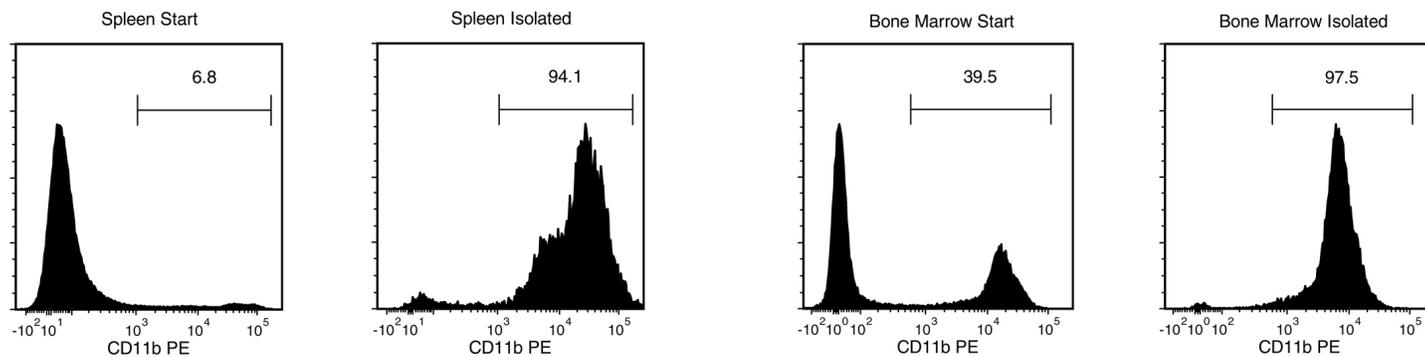
For purity assessment by flow cytometry use the following fluorochrome-conjugated antibody clone:

- Anti-Mouse CD11b Antibody, Clone M1/70 (Catalog #60001) at a concentration of 5 µg/mL

The following methods can also be used:

- Use a fluorochrome-conjugated secondary antibody, such as Goat Anti-Mouse IgG (H+L) Antibody, Polyclonal (Catalog #60138).
- Add fluorochrome-conjugated Anti-Mouse CD11b Antibody, Clone M1/70 at a concentration of 0.5 µg/mL immediately after adding the cocktail. This method labels the positive cells in the entire sample.

Data



Starting with mouse splenocytes and bone marrow samples, the CD11b⁺ cell content of the isolated fraction is typically $92.6 \pm 3.0\%$ and $98.4 \pm 2.3\%$, respectively (gated on viable singlet cells; mean \pm SD using the purple EasySep™ Magnet).

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