Technical Data Sheet

Oligo Mouse Anti-Human CD117

Product Information

Material Number:	940250
Size:	25 Tests
Clone:	104D2
Alternative Name:	KIT; c-Kit; SCFR; PBT; Mast/stem cell growth factor receptor
Reactivity:	Human (Tested in Development)
Isotype:	Mouse BALB/c IgG1
Immunogen:	Megakaryoctic cell line MOLM-1
Application:	Single Cell 3' Sequencing (Qualified)
Barcode Sequence:	ATGGAGAGCGATTGCGTGAGGATATGCGAGATTGTT
SeqID:	AHS0165
Volume Per Test:	2 µl
Workshop No.:	VI C30
Entrez Gene ID:	3815
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.
Regulatory Status:	RUO

Description

The 104D2 monoclonal antibody specifically binds to human CD117, the receptor for stem cell factor (SCF). It selectively recognizes NIH- 3T3 cells transfected with human c-kit, the gene that codes for SCF-R. The 104D2 antibody does not block the epitope that binds SCF. In the bone marrow of humans and mice, SCF is expressed primarily on hematopoietic progenitor cells. Lack of functional SCF or deficient SCF-R caused by mutations in the Sl and W loci, respectively, can result in severe anemia and a decrease in the number of primitive progenitor cells in mice. Human hematopoietic progenitor cells can be recognized by their surface expression of CD34. This cell population constitutes a small subset (1% to 5%) of bone marrow cells. CD34+ cells contain a small subpopulation of primitive/non-committed progenitors, with the remaining fraction being cells committed to the various hematopoietic lineages. SCF alone induces extensive proliferation of erythroid-committed progenitor cells (CD34lo CD71hi CD64-). On primitive (CD34hi CD38lo CD50+) and granulo-monocytic (CD34+ CD64+) progenitor cells, SCF synergistically enhances the effects of other cytokines, the strongest of which are on the primitive progenitor cells. In addition, SCF promotes survival of primitive progenitors in the absence of proliferation. The receptor is highly expressed at similar levels on all of the three mentioned CD34+ cell subsets, whereas B-lymphoid committed progenitor cells (CD34+ CD19+) express low levels of SCF-R. Among CD34- bone marrow cells, only a small number of cells (mostly erythroid) express the receptor.

Application Notes

The antibody was conjugated to an oligonucleotide that contains an antibody clone-specific barcode (ABC) flanked by a poly-A tail on the 3' end and a PCR handle (PCR primer binding site) on the 5' end. The ABC for this antibody was designed to be used with other BD AbSeq oligonucleotides conjugated to other antibodies. All AbSeq ABC sequences were selected in silico to be unique from human and mouse genomes, have low predicted secondary structure, and have high Hamming distance within the BD AbSeq portfolio, to allow for sequencing error correction and unique mapping. The poly-A tail of the oligonucleotide allows the ABC to be captured by the BD Rhapsody™ system. The 5' PCR handle allows for efficient sequencing library generation for Illumina sequencing platforms.
NOTE: The BD Rhapsody Single-Cell Analysis System must be used with the BD Rhapsody Express Instrument.

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze. The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography and conjugated to BD AbSeq oligonucleotide under optimal conditions.

Recommended Assay Procedure

Put all BD AbSeq Reagents to be pooled into a Latch Rack for 500 µL Tubes (Thermo Fisher Scientific Cat. No. 4900). Arrange the tubes so that they can be easily uncapped and re-capped with an 8-Channel Screw Cap Tube Capper (Thermo Fisher Scientific Cat. No. 4105MAT) and the reagents aliquoted with a multi-channel pipette.

BD AbSeq tubes should be centrifuged for ≥ 30 seconds at 400 × g to ensure removal of any content in the cap/tube threads prior to the first opening.

Suggested Companion Products

Catalog Number	Name	Size
554656	Stain Buffer (FBS)	500 mL
633701	Single-Cell Analysis System	1 Each
564219	Human BD Fc Block™	50 mg
564220	Human BD Fc Block™	0.25 mg

Product Notices

1. This reagent has been pre-diluted for use at the recommended volume per test. Typical use is 2 µl for 1 × 10^6 cells in a 200-µl staining reaction.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
5. Illumina is a trademark of Illumina, Inc.
6. This product is covered by one or more of the following patents: US 8,835,358; US 9,290,808; US 9,290,809; US 9,315,857; US 9,567,645; US 9,567,646; US 9,598,736; US 9,708,659; and US 9,816,137. This product, and only in the amount purchased by buyer, may be used solely for buyer's own internal research, in a manner consistent with the accompanying product literature. No other right to use, sell or otherwise transfer (a) this product, or (b) its components is hereby granted expressly, by implication or by estoppel. Diagnostic uses require a separate license.
7. Please refer to http://regdocs.bd.com to access safety data sheets (SDS).
8. Please refer to bd.com/genomics-resources for technical protocols.

References

Ashman LK, Buhring HJ, Aylett GW, Broudy VC, Muller C. Epitope mapping and functional studies with three monoclonal antibodies to the c-kit receptor tyrosine kinase, YB5.B8, 17F11, and SR-1. J Cell Physiol. 1994; 158(3):545-554.
Ashman LK, Cambareri A, Nguyen L, Bühring H-J. CD117 workshop panel report. In: Kishimoto T. Tadamitsu Kishimoto .. et al., ed. Leucocyte typing VI : white cell differentiation antigens : proceedings of the sixth international workshop and conference held in Kobe, Japan, 10-14 November 1996. New York: Garland Pub.; 1997; :816-818.
Rappold I, Ziegler BL, Kohler I, et al. Functional and phenotypic characterization of cord blood and bone marrow subsets expressing FLT3 (CD135) receptor tyrosine kinase. Blood. 1997; 90(1):111-125.

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