

# Technical Data Sheet

## Oligo Mouse Anti-Human EphB2

### Product Information

Material Number:	940259
Size:	25 Tests
Clone:	2H9
Alternative Name:	EPHB2; EphB2R; TYRO5; CAPB; DRT; EK5; EPHT3; EPTH3; HEK5; PCBC
Reactivity:	Human (Tested in Development)
Isotype:	Mouse BALB/c IgG1, $\kappa$
Immunogen:	Human EphB2 Recombinant Protein
Application:	Single Cell 3' Sequencing (Qualified)
Barcode Sequence:	TATTGCGGGTAGGATTTGTCTCGAAGCGTAGGTAGC
SeqID:	AHS0176
Volume Per Test:	2 $\mu$ l
Entrez Gene ID:	2048
Storage Buffer:	Aqueous buffered solution containing BSA and $\leq 0.09\%$ sodium azide.
Regulatory Status:	RUO

### Description

The 2H9 monoclonal antibody specifically binds to the Ephrin Type-B Receptor 2 (EphB2). EphB2 is a type I transmembrane glycoprotein that belongs to the Eph receptor family of tyrosine kinase receptors. EphB2 serves as a cell surface receptor tyrosine kinase for membrane-anchored ligands referred to as type B ephrins (ephrin-B). The EphB2 receptor can bind to ephrin-B1, ephrin-B2, and ephrin-B3. Transmembrane ephrin-B family members are key regulators of embryogenesis including development of the nervous and vascular systems. The EphB2 receptor functions as a chemodirectant in regulating cellular migration. EphB2/ephrin-B interactions orchestrate cell positioning by regulating cellular adhesion and repulsion during development, thereby influencing cell fate, morphogenesis and organogenesis. Signaling can occur in a forward pathway when the EphB2 receptor tyrosine kinase is activated by bound ligand and in a reverse pathway when transmembrane ephrin-B ligands are activated by EphB2 receptor-mediated crosslinking. In the adult body, Eph receptor signaling plays major roles in regulating the architecture and physiology of different tissues under normal as well as disease conditions such as cancer. Ephrin-B1 and ephrin-B2 levels are upregulated in the vasculature during inflammation. Ephrin-B2 molecules that are localized to the luminal endothelial surface can signal through the EphB2 which is expressed by monocytes. This interaction promotes monocyte differentiation into proinflammatory macrophages. In the intestinal epithelium, EphB2/ephrin-B interactions regulate both cell positioning and tumor progression. The differential expression patterns of EphB2 allows for the detection and isolation of various intestinal epithelial cell types. These include intestinal stem cells (ISCs) which express high levels of EphB2. The 2H9 antibody reportedly blocks the interaction of EphB2 with ephrin ligands and crossreacts with mouse EphB2.

### 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<sup>6</sup> 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](http://bd.com/genomics-resources) for technical protocols.

## References

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