

# Technical Data Sheet

## Oligo Rat Anti-Mouse TIM-4

### Product Information

Material Number:	940355
Size:	25 Tests
Clone:	21H12
Alternative Name:	TIMD-4, SMUCKLER, Tim4, Timd4
Reactivity:	Mouse (Tested in Development)
Isotype:	Rat LEW, also known as Lewis IgG1, κ
Immunogen:	Mouse TIM-4 Recombinant Protein
Application:	Single Cell 3' Sequencing (Qualified)
Barcode Sequence:	ATTTGGGTGTGATTTTCGGTGTCAATTTAGTGCCTC
SeqID:	AMM2160
Volume Per Test:	2 µl
Entrez Gene ID:	276891
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.
Regulatory Status:	RUO

### Description

The 21H12 monoclonal antibody specifically binds to TIM-4. TIM-4 is encoded by Timd4 (T cell immunoglobulin and mucin domain containing 4). TIM-4 is also known as Spleen, mucin-containing, knockout of lymphotoxin protein (SMUCKLER). TIM-4 is a single-pass type I membrane transmembrane glycoprotein belonging to the TIM family of the immunoglobulin superfamily. TIM-4 is expressed by macrophages and at low levels by dendritic cells. TIM-4 is a phosphatidylserine receptor that enhances the phagocytosis of apoptotic cells. It can also serve as a receptor for TIM-1, also known as the Hepatitis A virus cellular receptor 1 (Havcr1).

#### 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	Clone
554656	Stain Buffer (FBS)	500 mL	
633701	Single-Cell Analysis System	1 Each	
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2

## Product Notices

1. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
2. 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.
3. 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.
4. Illumina is a trademark of Illumina, Inc.
5. Please refer to [bd.com/genomics-resources](http://bd.com/genomics-resources) for technical protocols.
6. 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.
7. 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.
8. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).

## References

Albacker LA, Karisola P, Chang YJ, et al. TIM-4, a receptor for phosphatidylserine, controls adaptive immunity by regulating the removal of antigen-specific T cells. *J Immunol.* 2010; 185(11):6839-6849.

Freeman GJ, Casasnovas JM, Umetsu DT, DeKruyff RH. TIM genes: a family of cell surface phosphatidylserine receptors that regulate innate and adaptive immunity. *Immunol Rev.* 2010; 235(1):172-89.

Kobayashi N, Karisola P, Pena-Cruz V, et al. TIM-1 and TIM-4 glycoproteins bind phosphatidylserine and mediate uptake of apoptotic cells. *Immunity.* 2007; 27(6):927-940.

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