

Technical Data Sheet

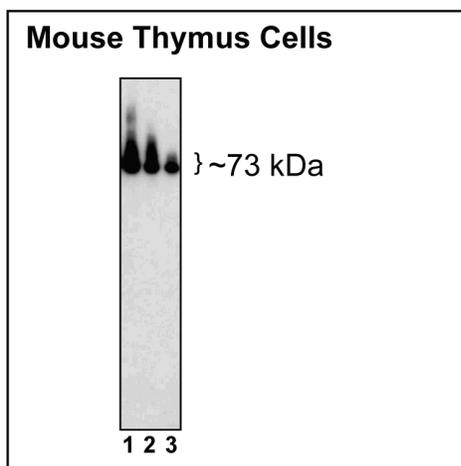
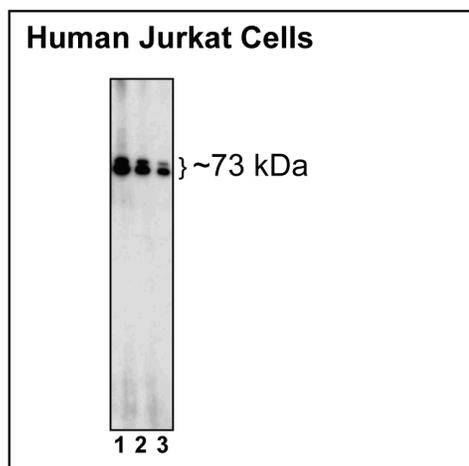
Purified Mouse anti-THEMIS

Product Information

Material Number:	562587
Alternate Name:	TSEPA; THMS1; C6orf190; C6orf207; SPOT; GASP; GRB2-associated protein
Size:	50 µg
Concentration:	0.5 mg/ml
Clone:	Q13-1103
Immunogen:	Human THEMIS Recombinant Protein
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human Tested in Development: Mouse
Target MW:	~73 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The Q13-1103 monoclonal antibody specifically binds to human THEMIS (Thymocyte-expressed molecule involved in selection). The human *THEMIS* gene encodes a 73-kDa signaling protein that is also known as thymocyte selection pathway associated (TSEPA), signaling phosphoprotein specific for T cells (SPOT) and GRB2-associated protein (GASP). The homologous mouse protein is encoded by the *Themis* gene. THEMIS mRNA is detected in the thymus, lymph nodes, spleen but not in the bone marrow or nonlymphoid tissues. It is expressed by all thymocytes including double- (high levels) and single-positive αβ T cells, γδ T cells and peripheral T cells (low levels) but not by B cells and NK cells. THEMIS plays a central role in T cell development including positive and negative selection processes in the thymus. It is involved in TCR signaling and gets phosphorylated quickly after TCR stimulation. In the mouse system, *Themis*-deficient double-positive thymocytes reportedly expressed lower levels of genes involved in later stages of T cell development including those related to cellular metabolism, cell cycle and survival functions. *Themis*-deficient thymocytes showed impaired selection that lead to the production of fewer mature thymocytes. The Q13-1103 antibody crossreacted with mouse Themis in Western blot testing of cellular lysates but did not crossreact when tested by immunofluorescent staining and flow cytometric analysis of cells.



Western blot analyses of THEMIS expressed by human Jurkat and BALB/c mouse thymus cells. Cell lysates from Jurkat cells (Cat. No. 611451) and mouse thymus cells (20 µg total cellular protein/lane) were electrophoresed (SDS-PAGE), transferred to membranes and then probed with Purified Mouse Anti-THEMIS antibody at concentrations of 1 (lane 1), 0.5 (lane 2), and 0.25 (lane 3) µg/ml, followed by HRP Goat Anti-Mouse Ig (Cat. No. 554002) and a chemiluminescent detection system. THEMIS was identified as a band of ~73 kDa.

Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Western blot	Routinely Tested
--------------	------------------

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.979.9408	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit bdbiosciences.com/contact

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton, Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2011 BD



Suggested Companion Products

<u>Catalog Number</u>	<u>Name</u>	<u>Size</u>	<u>Clone</u>
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
611451	Jurkat Cell Lysate	500 µg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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.

References

Fu G, Vallée S, Rybakin V, et al. Themis controls thymocyte selection through regulation of T cell antigen receptor-mediated signaling. *Nat Immunol.* 2009; 10(8):848-856. (Biology)

Johnson AL, Aravind L, Shulzhenko N, et al. Themis is a member of a new metazoan gene family and is required for the completion of thymocyte positive selection. *Nat Immunol.* 2009; 10(8):831-838. (Biology)

Lesourme R, Uehara S, Lee J, et al. Themis, a T cell-specific protein important for late thymocyte development. *Nat Immunol.* 2009; 10(8):840-847. (Biology)

Patrick MS, Oda H, Hayakawa K, et al. Gasp, a Grb2-associating protein, is critical for positive selection of thymocytes. *Proc Natl Acad Sci U S A.* 2009; 106(38):16345-16350. (Biology)

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.979.9408	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit bdbiosciences.com/contact

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton, Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2011 BD

