

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human 5T4 protein		
	Human 5T4 (Ser31-Ser355) Accession # Q13641.1	HHHHHH	Avi-tag
	N-terminus		C-terminus
N-terminal Sequence Analysis	Ser31		
Structure / Form	Biotinylated via Avi-tag		
Predicted Molecular Mass	38 kDa		

SPECIFICATIONS

SDS-PAGE	40-80 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Human 5T4 Antibody (Catalog # MAB49751) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human 5T4 His-tag Avi-tag (Catalog # AV110290) binds with an ED ₅₀ of 10-80 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 400 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

<p>Binding Activity</p> <p>When Human 5T4 Antibody (Catalog # MAB49751) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human 5T4 His-tag Avi-tag (Catalog # AV110290) binds with an ED₅₀ of 10-80 ng/mL.</p>	<p>SDS-PAGE</p> <p>2 µg/lane of Recombinant Human 5T4 His-tag Avi-tag was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 40-80 kDa.</p>
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BACKGROUND

5T4, also known as Trophoblast glycoprotein and Wnt-activated inhibitory factor 1 (WAIF1), is a single-pass transmembrane protein which may function as an inhibitor of Wnt/beta-catenin signaling (1). Distinct regions on the 5T4 ectodomain which contains eight leucine-rich repeats are thought to antagonize Wnt signaling (2). 5T4 has limited expression in normal adult tissues and in some solid tumors, while expression is elevated in human carcinomas which have been correlated with poor survival and prognosis (3-5). Human 5T4 is a 420 amino acid (aa) protein that includes a 31 aa signal peptide, a 324 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 44 aa cytoplasmic tail. Within the ECD, human 5T4 shares 78% and 77% aa sequence identity with mouse and rat 5T4, respectively. It has been identified that TIP-2/GIPC, a common interacting protein involved in cancer, interacts with 5T4 through its PDZ domain (6). 5T4 inhibits Wnt/ β -catenin signaling by binding to LRP6 and inhibit Wnt-induced LRP6 internalization into endocytic vesicles (1). Conversely, 5T4 can activate noncanonical Wnt signaling through DKK1 (1). In addition to LRP6, in-house data indicates 5T4 can also interact with Frizzled-8.

References:

1. Kagermeier-Schenk, B. *et al.* (2011) *Dev. Cell.* **21**:1129.
2. Zhao, Y. *et al.* (2014) *Structure.* **22**:612.
3. Starzynska, T. *et al.* (1994) *Br. J. Cancer.* **69**:899.
4. Naganuma, H. *et al.* (2002) *Anticancer Res.* **22**:1033.
5. Harris, J.L. *et al.* (2018) *Int. J. Biochem. Cell Biol.* **99**:28.
6. Awan, A. *et al.* (2002) *BBRC* **290**:1030.