Human Transcobalamin II Antibody

Monoclonal Mouse IgG_{2B} Clone # 874420

Catalog Number: MAB7895

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Transcobalamin II in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG_{2B} Clone # 874420
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Transcobalamin II Glu19-Trp427 Accession # P20062
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

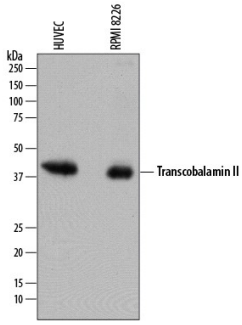
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Simple Western	20 µg/mL	See Below

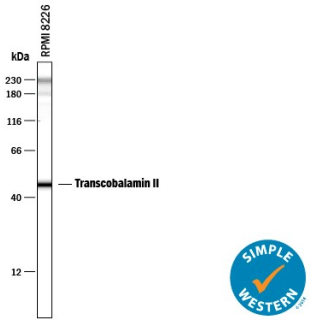
DATA

Western Blot



Detection of Human Transcobalamin II by Western Blot. Western blot shows lysates of HUVEC human umbilical vein endothelial cells. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human Transcobalamin II Monoclonal Antibody (Catalog # MAB7895) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for Transcobalamin II at approximately 43 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Simple Western



Detection of Human Transcobalamin II by Simple Western™. Simple Western lane view shows lysates of RPMI 8226 human multiple myeloma cell line, loaded at 0.5 mg/mL. A specific band was detected for Transcobalamin II at approximately 47 kDa (as indicated) using 20 µg/mL of Mouse Anti-Human Transcobalamin II Monoclonal Antibody (Catalog # MAB7895) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system. Non-specific interaction with the 230 kDa Simple Western standard may be seen with this antibody.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Transcobalamin II, also known as TCN2, TC-2 or TC, is a 42-44 kDa, monomeric, secreted member of the eukaryotic cobalamin transport family of molecules. It is a key player in the transport and absorption of VitB12. TCN1 is a salivary gland protein that binds oral/dietary B12. Once in the stomach, B12 is transferred to IF/Intrinsic Factor, and this complex remains intact during passage through the small intestine. In the distal ileum, the IF:VitB12 complex is internalized following binding to cubam on enterocyte membranes. Once internalized, VitB12 is processed and re-expressed on MRP1 on the enterocyte's basal surface. Here it is transferred to TCN-2, a binding protein secreted by endothelial cells that accounts for the transport of anywhere from 10-30% of circulating VitB12/cobalamin. The TCN2:VitB12 complex is ultimately internalized by cells expressing a membrane-bound, 58 kDa TCN2 receptor termed TCblR. Once internalized, VitB12 is released and converted into cofactors that are involved in methionine biosynthesis. Human TCN2 is synthesized as a 427 amino acid (aa) precursor that contains an 18 aa signal sequence, plus a 409 aa mature region that binds one VitB12 molecule. There are three potential splice variants of TCN2. One contains a Trp substitution for aa 116-143, a second possesses an Ile substitution for aa 336-427, and a third shows a deletion of aa 143-193. An Arg-to-Pro polymorphism at position 259 correlates with statistically elevated circulating levels of TCN2. Over aa 19-427, human TCN2 shares 72% aa sequence identity with mouse TCN2.

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