

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
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 TCbIR. 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.

PRODUCT SPECIFIC NOTICES

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