Mouse TGF-β RIII Alexa Fluor® 488-conjugated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF5034G
100 µg

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse TGF-β RIII in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human TGF-β sRII and recombinant mouse TGF-β RII is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse TGF-β RIII Gly23-Thr785 Accession # NP_035708
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 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

Transforming growth factor beta receptor III (TGF-β RIII; also betaglycan) is a ubiquitously expressed, 280 kDa type I transmembrane proteoglycan member of the TGF-β superfamily of proteins (1). Mouse TGF-β RIII is synthesized as an 850 amino acid (aa) precursor that consists of a 22 aa signal sequence, a 763 extracellular domain (ECD), a 23 aa transmembrane region, and a 42 aa cytoplasmic tail. The large ECD contains heparan sulfate and chondroitin sulfate glycosaminoglycans, five potential N-linked glycosylation sites, and a zona pellucida-like domain from residues 454-731 (1, 2). The short cytoplasmic domain is rich in serine and threonine, but has no discernible signaling structure typical of receptor kinases (2). Proteolysis at one of two potential juxtamembrane cleavage sites (Lys743Lys and Leu750AlaValVal) allows cells to release TGF-β RIII in a soluble form (1, 2). Mouse TGF-β RIII shares 94%, 82%, 80%, and 67% aa sequence identity with rat, human, porcine, and chicken TGF-β RIII, respectively (2). In all of these species, TGF β RIII contains 17 cysteines that are 100% conserved (2). TGF-β RIII binds with high affinity to TGF-β1, TGF-β2, and TGF-β3 isoforms (1). TGF-β RIII functions by binding, and then "presenting" ligand to TGF-beta type II receptors (1, 3). It also functions to limit ligand availability to the receptor via proteolysis which releases the soluble form of TGF β RIII along with any bound factors, making them inaccessible to cell-surface receptors (1, 3). TGF-β RIII can therefore enhance or inhibit cell signaling. TGF-β RIII has been shown to play an essential role in the formation of the atrioventricular cushion and coronary vessels during development of the heart (4-6). TGF β RIII also plays a role in many cancers. Increased expression of TGF β RIII is found in higher grade lymphomas, and reduced expression of TGF β RIII is found with advanced stage neuroblastomas and ovarian carcinomas (4, 7-9). Low TGF-β RIII expression also correlates with higher grade among a cohort of breast cancers (4, 10). Additionally, overexpression of TGF-β RIII in MDA-231 human breast cancer cells and DU145 prostate cancer cells results in decreased tumor invasion *in vitro* and *in vivo* (4, 11, 12).

PRODUCT SPECIFIC NOTICES

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