

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TIGAR/C12orf5 in direct ELISAs and Western blots.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human TIGAR/C12orf5 Ala2-Arg270 Accession # Q9NQ88
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 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.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	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

TIGAR (TP53-Inducible Glycolysis and Apoptosis Regulator; also C12orf5) is a 29-30 kDa member of the phosphoglycerate mutase family of molecules. TIGAR is likely widely expressed, and serves as a target of p53 activity. Cellular glucose is normally converted into Glu-6-P. This compound can either be converted into Fru-6-P for use in ATP production, or directed into the pentose phosphate to create NADPH. If Fru-6-P is formed, it can be acted upon by either PFK1 or PFK2. PFK1 creates Fru-1,6-P2, which is subsequently broken down into pyruvate for use in the Krebs cycle. PFK2 creates Fru-2,6-P2, which is not an energy source but a regulator that promotes the activity of PFK1. TIGAR dephosphorylates Fru-2,6-P2, creating Fru-6-P. This both inhibits PFK1 activity, and drives the system backwards, recreating Glu-6-P which enters the pentose phosphate shunt and generates NADPH. p53 induces TIGAR synthesis, with a resulting increase in NADPH. NADPH increases glutathione which neutralizes ROS, and blocks activation of caspase-2. The emphasis away from energy production also leads to the activation of other pathways that produce molecules involved in DNA repair. Human TIGAR is 270 amino acids (aa) in length. It contains one histidine phosphatase domain (aa 6-90) plus two utilized phosphorylation sites. There is one potential alternative start site at Met60. Full-length human TIGAR shares 72% aa sequence identity with mouse TIGAR.

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