



IF3 (T-20): sc-84315

BACKGROUND

IF3 is also known as MTIF3 (mitochondrial translational initiation factor 3), DC38, IF3_{mt} or IF-3mt, and is a 278 amino acid protein that is localized to mitochondria. IF3 aids in the initiation of protein synthesis by binding the 28S ribosomal subunit, which is a protein synthesis initiation site. The 28S and 39S ribosomal structures are subunits of the 55S ribosome, whose formation is favored in the absence of IF3, because IF3 allows the subunits to remain in their free form. Altered forms of IF3 may affect IF3's function, which could alter the availability of mitochondrial encoded proteins, leading to oxidative stress and possibly causing an increased susceptibility to Parkinson's disease. Polymorphism of the gene encoding IF3 is thought to be associated with Parkinson's disease.

REFERENCES

1. Koc, E.C. and Spremulli, L.L. 2002. Identification of mammalian mitochondrial translational initiation factor 3 and examination of its role in initiation complex formation with natural mRNAs. *J. Biol. Chem.* 277: 35541-35549.
2. Bhargava, K. and Spremulli, L.L. 2005. Role of the N- and C-terminal extensions on the activity of mammalian mitochondrial translational initiation factor 3. *Nucleic Acids Res.* 33: 7011-7018.
3. Grasso, D.G., Christian, B.E., Spencer, A. and Spremulli, L.L. 2007. Overexpression and purification of mammalian mitochondrial translational initiation factor 2 and initiation factor 3. *Meth. Enzymol.* 430: 59-78.
4. Abahuni, N., Gispert, S., Bauer, P., Riess, O., Krüger, R., Becker, T. and Auburger, G. 2007. Mitochondrial translation initiation factor 3 gene polymorphism associated with Parkinson's disease. *Neurosci. Lett.* 414: 126-129.
5. Haque, M.E. and Spremulli, L.L. 2008. Roles of the N- and C-terminal domains of mammalian mitochondrial initiation factor 3 in protein biosynthesis. *J. Mol. Biol.* 384: 929-940.
6. Gaur, R., Grasso, D., Datta, P.P., Krishna, P.D., Das, G., Spencer, A., Agrawal, R.K., Spremulli, L. and Varshney, U. 2008. A single mammalian mitochondrial translation initiation factor functionally replaces two bacterial factors. *Mol. Cell* 29: 180-190.
7. Haque, M.E., Grasso, D. and Spremulli, L.L. 2008. The interaction of mammalian mitochondrial translational initiation factor 3 with ribosomes: evolution of terminal extensions in IF3mt. *Nucleic Acids Res.* 36: 589-597.

CHROMOSOMAL LOCATION

Genetic locus: MTIF3 (human) mapping to 13q12.2.

SOURCE

IF3 (T-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of IF3 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84315 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IF3 (T-20) is recommended for detection of IF3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IF3 siRNA (h): sc-75319, IF3 shRNA Plasmid (h): sc-75319-SH and IF3 shRNA (h) Lentiviral Particles: sc-75319-V.

Molecular Weight of IF3: 32 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotting A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.