

eRF1 (G-1): sc-390428



The Power to Question

BACKGROUND

Translation is carried out by the ribosome and several associated protein factors through three consecutive steps: initiation, elongation and termination. Termination of protein synthesis takes place when the ribosomal A site is occupied simultaneously by one of three stop codons and by a class 1 translation termination factor. In eukaryotes, this termination factor is the eukaryotic release factor 1 (eRF1), a protein that promotes hydrolysis of the last peptidyl-tRNA on the ribosome. eRF1 activity is stimulated by the association with the GTP-binding protein eRF3. eRF1 forms a quaternary complex with eRF3, GTP and the ribosome. This complex performs a dual role, where, in the "GTP state," it controls the positioning of eRF1 toward the stop codon and peptidyl-tRNA, and, in the "GDP state," it promotes the release of the eRFs from the ribosome. eRF1 contains a highly conserved Asn-Ile-Lys-Ser (NIKS) tetrapeptide, which is essential for the interaction of eRF1 with the ribosome. The gene encoding human eRF1 maps to chromosome 5q31.2.

REFERENCES

1. Frolova, L., et al. 1996. Eukaryotic polypeptide chain release factor eRF3 is an eRF1- and ribosome-dependent guanosine triphosphatase. *RNA* 2: 334-341.
2. Le Goff, X., et al. 1997. Overexpression of human release factor 1 alone has an antisuppressor effect in human cells. *Mol. Cell. Biol.* 17: 3164-3172.
3. Frolova, L.Y., et al. 1998. Functional expression of eukaryotic polypeptide chain release factors 1 and 3 by means of baculovirus/insect cells and complex formation between the factors. *Eur. J. Biochem.* 256: 36-44.
4. Frolova, L., et al. 2002. Highly conserved NIKS tetrapeptide is functionally essential in eukaryotic translation termination factor eRF1. *RNA* 8: 129-136.
5. Moreira, D., et al. 2002. Evolution of eukaryotic translation elongation and termination factors: variations of evolutionary rate and genetic code deviations. *Mol. Biol. Evol.* 19: 189-200.
6. Mazur, A.M., et al. 2002. A new method to measure the functional activity of class-1 translation termination factor eRF1. *Mol. Biol.* 36: 129-135.
7. Dubourg, C., et al. 2002. Evaluation of ETF1/eRF1, mapping to 5q31, as a candidate myeloid tumor suppressor gene. *Cancer Genet. Cytogenet.* 134: 33-37.

CHROMOSOMAL LOCATION

Genetic locus: ETF1 (human) mapping to 5q31.2; Etf1 (mouse) mapping to 18 B1.

SOURCE

eRF1 (G-1) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of eRF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

eRF1 (G-1) is recommended for detection of eRF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

eRF1 (G-1) is also recommended for detection of eRF1 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for eRF1 siRNA (h): sc-37871, eRF1 siRNA (m): sc-37872, eRF1 shRNA Plasmid (h): sc-37871-SH, eRF1 shRNA Plasmid (m): sc-37872-SH, eRF1 shRNA (h) Lentiviral Particles: sc-37871-V and eRF1 shRNA (m) Lentiviral Particles: sc-37872-V.

Molecular Weight of eRF1: 50 kDa.

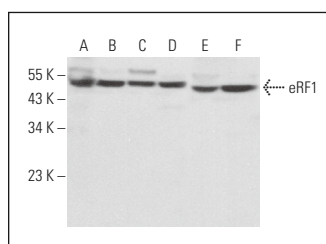
Positive Controls: A549 cell lysate: sc-2413, 3T3-L1 cell lysate: sc-2243 or PC-12 cell lysate: sc-2250.

RECOMMENDED SUPPORT REAGENTS

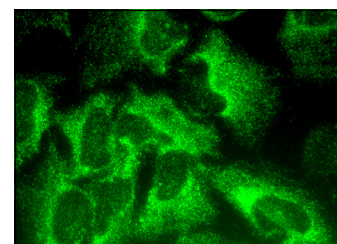
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.
- 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



eRF1 (G-1): sc-390428. Western blot analysis of eRF1 expression in 3T3-L1 (A), A549 (B), HL-60 (C), PC-12 (D), Raji (E) and THP-1 (F) whole cell lysates.



eRF1 (G-1): sc-390428. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.