Product Information

3050 Spruce Street, Saint Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Anti-eRF1
produced in rabbit, affinity isolated antibody

Product Number **E8156**

Product Description

Anti-eRF1 is produced in rabbit using as immunogen a synthetic peptide corresponding to a fragment of human eRF1, (GeneID: 2107), conjugated to KLH via a C-terminal added cysteine residue. The immunizing peptide is conserved between human, rat, and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-eRF1 (also known as eTF1, TB3-1, and Protein Cl1) specifically recognizes eRF1. Applications include the detection of eRF1 by immunoblotting (50 kDa) and immunoprecipitation. Detection of the eRF1 band by immunoblotting is specifically inhibited with the immunizing peptide.

Protein synthesis has four steps: initiation, elongation, termination, and recycling. The termination process is universal and requires two classes of release factors (RFs). Class 1 RFs (RF1 and RF2) recognize the stop codons on the mRNA and promotes the hydrolysis of peptidyl-tRNA at the ribosomal peptydyl transferase center.[1, 2] Class 2 RFs (RF3) are GTPases that enhance eRF1 (eukaryotic peptide chain release factor subunit 1) activity.[3] Prokaryotes use two class 1 RFs, RF1 and RF2, each recognizing two out of three stop codons, while eukaryotes have only one class 1 RF, eRF1, that recognizes all three stop codons.[4]

eRF1 possesses three putative domains: N, M, and C. The N-terminal domain takes part in the recognition of the stop codon,[5] the M domain is responsible for the hydrolytic activity of peptidyl transferase,[4] and the C-domain, which is not involved in stop codon recognition, binds to eRF3.[6] Crystal structure analysis of eRF1 demonstrated that the overall shape and dimensions of eRF1 resemble a tRNA molecule with domains N, M, and C of eRF1 corresponding to the anticodon loop, aminoacyl acceptor stem, and T stem of a tRNA molecule, respectively.[5]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1 μg/mL is recommended using 3T3 or Rat1 cell extracts.

Immunoprecipitation: a working amount of 1–2 μg is recommended using HeLa cell lysates.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Buckingham, R.H. et al., *Mol. Microbiol*., **24**, 33164-33170 (1997).
2. Nakamura, Y. et al., *Genes Cells*, **3**, 265-278 (1998).
3. Pel, H.J. et al., *RNA*, **4**, 47-54 (1998).
4. Frolova, L.Y. et al., *RNA*., **5**, 1014-1020 (1999).
5. Song, H. et al., *Cell*, **100**, 311-321 (2000).
6. Frolova, L.Y. et al., *RNA*, **6**, 381-390 (2000).

VS,SG,CS,PHC,MAM 01/19-1