

PRODUCT INFORMATION



mTOR/mLST8/Raptor Complex (human, recombinant)

Item No. 33985

Overview and Properties

Synonyms: **mTOR:** Serine/Threonine-protein Kinase mTOR, FK506-binding Protein 12-Rapamycin Complex-associated Protein 1, FKBP12-Rapamycin Complex-associated Protein, Mammalian Target of Rapamycin, Mechanistic Target of Rapamycin, Rapamycin and FKBP12 Target 1, Rapamycin Target Protein 1, FRAP
mLST8: Target of Rapamycin Complex Subunit LST8, TORC Subunit LST8, G protein β Subunit-like, Gable, G β L, Mammalian Lethal with SEC13 Protein 8
Raptor: Regulatory-associated Protein of mTOR, p150 Target of Rapamycin-scaffold Protein, p150 TOR-scaffold Protein, RPTOR

Source: Active recombinant human N-terminal DYKDDDDK-tagged mTOR, N-terminal His-tagged mLST8, and N-terminal His-tagged Raptor expressed in insect cells

Amino Acids: 1,362-2,549 (mTOR), 2-326 (mLST8), and 2-1,335 (Raptor)

Uniprot No.: P42345 (mTOR), Q9BVC4 (mLST8), Q8N122 (Raptor)

Molecular Weight: 137 (mTOR), 37 (mLST8), and 150 (Raptor) kDa

Storage: -80°C (as supplied)

Stability: ≥ 6 months

Purity: $\geq 50\%$ estimated by SDS-PAGE

Supplied in: 40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, 20% glycerol, and variable FLAG peptide

Protein

Concentration: *batch specific* mg/ml

Activity: *batch specific* U/ml

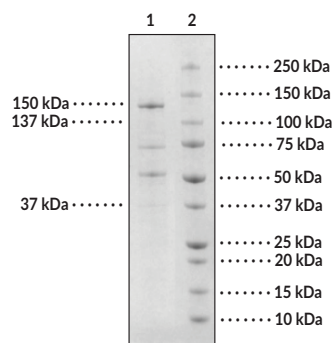
Specific Activity: *batch specific* U/mg

Unit Definition: One unit is defined as the amount of enzyme required to produce 1 pmol of ADP in 40 mM Tris-HCl, pH 7.4, 20 mM magnesium chloride, 0.1 mg/mL BSA, and 2 mM DTT with 100 μ M ATP, 0.1 mg/mL 4EBP1 and 5 mM MnCl₂ at 30°C for 45 min. ATPase activity measured in an ADP detection assay.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

4-20% SDS-Page Coomassie Staining

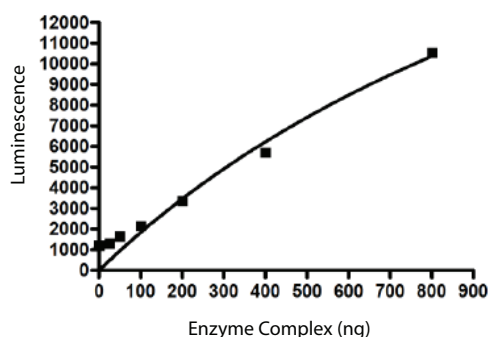


Lane 1: mTOR/mLST8/Raptor Complex (3 μ g)
Lane 2: MW Markers

SDS-PAGE Analysis of mTOR/mLST8/Raptor Complex.

Representative gel image shown; actual purity may vary between each batch.

Specific Activity



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

mTORC1 is a protein complex composed of the serine/threonine kinase mammalian target of rapamycin (mTOR), TOR complex subunit LST8 (mLST8), regulatory-associated protein of mTOR (Raptor), proline-rich Akt substrate 40 kDa (PRAS40), and DEP domain-containing mTOR-interacting protein (Deptor) that functions as a nutrient sensor and regulates cell growth and metabolism.²⁻⁴ PRAS40 and Deptor act as negative regulators of mTORC1 activity, and mLST8 and Raptor as scaffold proteins for substrates such as 4E-BP1 and p70 ribosomal S6 kinase 1 (p70S6K1). mTORC1 localizes to the plasma membrane, lysosome, and nucleus depending on its upstream activation signal, which include AMPK, PI3K, and Akt.^{4,6} Activation of mTORC1 is influenced by growth factors, energy status, oxygen levels, and amino acid availability and is involved in a wide variety of processes, including aging, autophagy, stem cell and immune function, cellular senescence, and protein translation.^{1,2,4,7} Dysregulation of the mTOR signaling pathway is associated with various pathologies, including cancer, rheumatoid arthritis, epilepsy, neurodegenerative diseases, and diabetes.^{2,4,5} Cayman's mTOR/mLST8/Raptor Complex (human, recombinant) protein can be used for enzyme activity assays.

References

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