PRODUCT INFORMATION



TAK1-TAB1 Fusion (human, recombinant)

Item No. 33990

Overview and Properties

| Synonyms: | TAK1 : MAP3K7, TGF1a, TGFβ-activated Kinase 1, |
|--|---|
| | Mitogen-activated Protein Kinase Kinase Kinase 7, |
| | Transforming Growth Factor-β-activated Kinase 1, TGF-β-activated Kinase 1 |
| | TAB1: MAP3K7IP1, TAK1-binding Protein 1, |
| | TGF-β-activated Kinase 1 and MAP3K7-binding Protein 1, |
| | Mitogen-activated Protein Kinase Kinase Kinase 7-interacting Protein 1 |
| Source: | Active recombinant human N-terminal GST-tagged TAK1 fused to TAB1 via a DFGGGGG |
| | peptide linker expressed in insect cells |
| Amino Acids: | 1-303 (TAK1) and 437-504 (TAB1) |
| Uniprot No.: | O43318 (TAK1), Q15750 (TAB1) |
| Molecular Weight: | 69 kDa |
| Storage: | -80°C (as supplied) |
| Stability: | ≥6 months |
| Purity: | <i>batch specific</i> (≥93% estimated by SDS-PAGE) |
| Supplied in: | 40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, |
| | 3 mM DTT, and 20% glycerol |
| Protein | |
| Concentration: | <i>batch specific</i> mg/ml |
| Activity: | Kinase activity confirmed using MBP as a substrate at 35°C in an ADP detection assay. |
| Specific Activity: | batch specific U/mg |
| Bioactivity: | See figures for details |
| Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis. | |

Images



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

TGF- β -activated kinase 1 (TAK1) is a member of the serine/threonine MAP3K family that has roles in immunity and inflammation.^{1,2} It binds to TAK1-binding protein 1 (TAB1) via its N-terminal kinase domain and to TAB2 and TAB3 via its C-terminal domain.¹ TAK1 is ubiquitously expressed and constitutively associated with its activating binding partner TAB1, whereas it only associates with TAB2 and TAB3 following stimulation by upstream factors such as IL-1 β .²⁻⁵ It is involved in innate and adaptive immunity and the inflammatory response.^{1,2} A TAK1-TAB1 fusion protein induces the activation of JNK, p38 MAPK, and IkB kinase (IKK) and the production of IL-6 in cancer cells.⁵ Tak1 knockdown induces splenomegaly and increases serum levels of several interleukin cytokines in mice.⁶ Hyperactivation of TAK1-TAB complexes is associated with autoimmune diseases and tumorigenesis.² Cayman's TAK1-TAB1 Fusion (human, recombinant) protein can be used for enzyme activity assays.

References

- 1. Dai, L., Thu, C.A., Liu, X.-Y., et al. TAK1, more than just innate immunity. IUBMB Life 64(10), 825-834 (2012).
- 2. Xu, Y.-R. and Lei, C.-Q. TAK1-TABs complex: A central signalosome in inflammatory responses. Front. Immunol. 11, 608976 (2021).
- Kondo, M., Osada, H., Uchida, K., et al. Molecular cloning of human TAK1 and its mutational analysis in 3. human lung cancer. Int. J. Cancer 75(4), 559-563 (1998).
- Kishimoto, K., Matsumoto, K., and Ninomiya-Tsuji, J. TAK1 mitogen-activated protein kinase kinase 4. kinase is activated by autophosphorylation within its activation loop. J. Biol. Chem. 275(10), 7359-7364 (2000).
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- 6. Vink, P.M., Smout, W.M., Driessen-Engels, L.J., et al. In vivo knockdown of TAK1 accelerates bone marrow proliferation/differentiation and induces systemic inflammation. PLoS One 8(3), e57348 (2013).

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