

TRPA1 Protein, Rat, Recombinant (His & Myc)

General Information

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| Synonyms: | Transient receptor potential cation channel subfamily A member 1;Ankyrin-like with transmembrane domains protein 1;Trpa1;Wasabi receptor;Anktm1 |
| Protein Construction: | 960-1125 aa |
| Species: | Rat |
| Expression Host: | E. coli |
| Accession: | Q6RI86 |
| Molecular Weight: | 27.3 kDa (predicted) |
| AA Sequence: | IGLAVGDIAEVQKHASLKRIAMQVELHTNLEKKLPFWYLRKVDQRSTIVYPNRPGRMLRFFHYFLSMQETR QEAPNIDTCLMEILKQKYRLKDLTSLLEKQHELIKLIQKMEISETEDEDNHCSFQDRFKKERLEQMHSKWNF VLNAVKTCTHCSISHPDI |

QC Testing

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| Biological Activity: | Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first. |
| Purity: | > 85% as determined by SDS-PAGE. |
| Endotoxin: | < 1.0 EU/μg of the protein as determined by the LAL method. |
| Formulation: | If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose, pH 8.0. |

Preparation and Storage

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| Reconstitution: | Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100 μg/mL. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing. |
| Stability & Storage: | Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small> |
| Shipping: | In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice. |

Protein Background

Receptor-activated non-selective cation channel involved in pain detection and possibly also in cold perception, oxygen concentration perception, cough, itch, and inner ear function. Shows 8-fold preference for divalent over

monovalent cations. Has a central role in the pain response to endogenous inflammatory mediators and to a diverse array of irritants, such as allylthiocyanate (AITC) found in mustard oil or wasabi, cinnamaldehyde, diallyl disulfide (DADS) from garlic, and acrolein, an irritant from tears gas and vehicle exhaust fumes. Acts also as an ionotropic cannabinoid receptor by being activated by delta(9)-tetrahydrocannabinol (THC), the psychoactive component of marijuana. Is activated by a large variety of structurally unrelated electrophilic and non-electrophilic chemical compounds. Electrophilic ligands activate TRPA1 by interacting with critical N-terminal Cys residues in a covalent manner, whereas mechanisms of non-electrophilic ligands are not well determined. May be a component for the mechanosensitive transduction channel of hair cells in inner ear, thereby participating in the perception of sounds. Probably operated by a phosphatidylinositol second messenger system.

Reference

Discovery of novel oxindole derivatives as TRPA1 antagonists with potent analgesic activity for pain treatment[J]. Bioorganic Chemistry, 2025, 154: 108088.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481