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Product Information

Ubiquitin-Carrier Protein H5a, GST-tagged, human recombinant, expressed in *E. coli*

Catalog Number **U8632**
Storage Temperature –70 °C

Synonym: UbcH5a

Product Description

Ubiquitin-carrier Protein 5a, GST-tagged is produced from a DNA sequence corresponding to human Ubc5a fused to a Glutathione S-Transferase tag. The fusion protein has a molecular mass of ~47 kDa.

Degradation of short-lived, key regulatory proteins by the ubiquitin-proteasome pathway plays key roles in a number of cellular processes. A number of proteins are degraded by this system including: cyclins, cyclin-dependent kinases[1,2] and their inhibitors, tumor suppressors, oncoproteins, and transcriptional activators and their inhibitors.

Two discrete steps are involved in the ubiquitin-mediated degradation of proteins: signaling by covalent conjugation of multiple ubiquitin moieties and degradation of the tagged substrate. Conjugation occurs by a three-step mechanism involving three different enzymes that act sequentially: E1, E2, and E3. Ubiquitin-activating enzyme (E1) catalyzes the activation of ubiquitin, then E2 (ubiquitin-conjugating enzyme, or ubiquitin carrier protein) transfers activated ubiquitin to E3, which is bound to the substrate. E3 catalyzes the polyubiquitination of the targeted protein. The polyubiquitin tagged protein is then degraded by the 26S proteasome in an ATP-dependent process and free ubiquitin is released.[3-5]

Although it appears there is a single ubiquitin-activating enzyme (E1), a number of species or isoforms of ubiquitin-carrier proteins (E2s) and multiple families of ubiquitin-protein ligases (E3s) exist.[6] A large number of E2s (ubquitin-carrier protein or Ubcs) have been identified. In the yeast *S. cerevisiae* 13 genes encode E2-like proteins. Specific E2s may have overlapping functions or may be involved in specific cellular functions. In humans, the E2 Ubc5a is one of 3 closely related Ubcs that stimulates the conjugation of ubiquitin to the tumor suppressor p53 in the presence of E6-AP and E6 and appears to correspond to the yeast E2 Ubc4/5.[7,8]

UbcH5a, GST-tagged is supplied as 100 µg protein in a solution of 50 mM HEPES, pH 8.0, 100 mM NaCl, 1 mM DTT, and 10% glycerol.

Purity: ≥95% (SDS-PAGE)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the product at –70 °C. Avoid repeated freeze-thaw cycles. Do not store in a frost-free freezer.

References

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