**APJ395Hu01 100μg**
**Active Carbohydrate Sulfotransferase 5 (CHST5)**
**Organism Species: *Homo sapiens* (Human)**
***Instruction manual***

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

## [ PROPERTIES ]

**Source:** Prokaryotic expression.
**Host:** *E. coli*
**Residues:** Met1~Asp411
**Tags:** N-terminal His-tag
**Purity:** >95%
**Endotoxin Level:** <1.0EU per 1μg (determined by the LAL method).
**Buffer Formulation:** PBS, pH7.4, containing 0.01% Sarcosyl, 5%Trehalose .
**Original Concentration:** 50μg/mL
**Applications:** Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
**Predicted isoelectric point:** 10.5
**Predicted Molecular Mass:** 49.9kDa
**Accurate Molecular Mass:** 60kDa as determined by SDS-PAGE reducing conditions.
Phenomenon explanation:
The possible reasons that the actual band size differs from the predicted are as follows:
1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

## [ USAGE ]

Reconstitute in dd$H_2O$ to a concentration of 0.1-0.5 mg/mL. Do not vortex.

## [ STORAGE AND STABILITY ]

**Storage:** Avoid repeated freeze/thaw cycles.

Store at 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

**Stability Test:** The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

## [ SEQUENCE ]

MGMRARVPKVAHSTRRPPAARMWLPRFSSKTVTVLLLAQTTCLLLFIISRPGPSSPAGGE
DRVHVLVLSSWRSGSSFLGQLFSQHPDVFYLMEPAWHVWTTLSQGSAATLHMAVRDL
MRSIFLCDMDVFDAYMPQSRNLSAFFNWATSRALCSPPACSAFPRGTISKQDVCKTLCTR
QPFSLAREACRSYSHVVLKEVRFFNLQVLYPLLSDPALNLRIVHLVRDPRAVLRSREAAGPI
LARDNGIVLGTNGKWVEADPHLRLIREVCRSHVRIAEAATLKPPPFLRGRYRLVRFEDLA
REPLAEIRALYAFTGLTLTPQLEAWIHNITHGSGIGKPIEAFHTSSRNARNVSQAWRHALPF
TKILRVQEVCAGALQLLGYRPVYSADQQRDLTLDLVLPRGPDHFSWASPD

## [ ACTIVITY ]

Carbohydrate Sulfotransferase 5 (CHST5) is a key Golgi-resident sulfotransferase enzyme. It specifically catalyzes the transfer of sulfate groups from 3′-phosphoadenosine-5′-phosphosulfate to carbohydrate moieties on glycoproteins and glycolipids, predominantly acting on N-acetylglucosamine residues within mucin-type O-glycans. Expressed heavily in intestinal epithelial tissues, it shapes the sulfated glycan landscape of the intestinal mucosal barrier. Deficient CHST5 activity disrupts mucosal glycosylation, weakens gut protective functions, and correlates with inflammatory bowel disorders, altered microbiota adhesion, and impaired epithelial defense. Its sulfation modification modulates

glycoprotein stability, ligand recognition, and cell-surface signaling to sustain intestinal homeostasis. CHST5 mediates sulfation modification of MUC2 glycans to stabilize secreted intestinal mucus layers. Briefly, MUC2 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μL were then transferred to CHST5-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-MUC2 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 μL stop solution to the wells and read at 450/630nm immediately. Measured by its binding ability in a functional ELISA. When recombinant human CHST5 is immobilized at 2 μg/mL(100 μL/well), the concentration of MUC2 that produces 50% optimal binding response is found to be approximately 1.918 μg/mL.

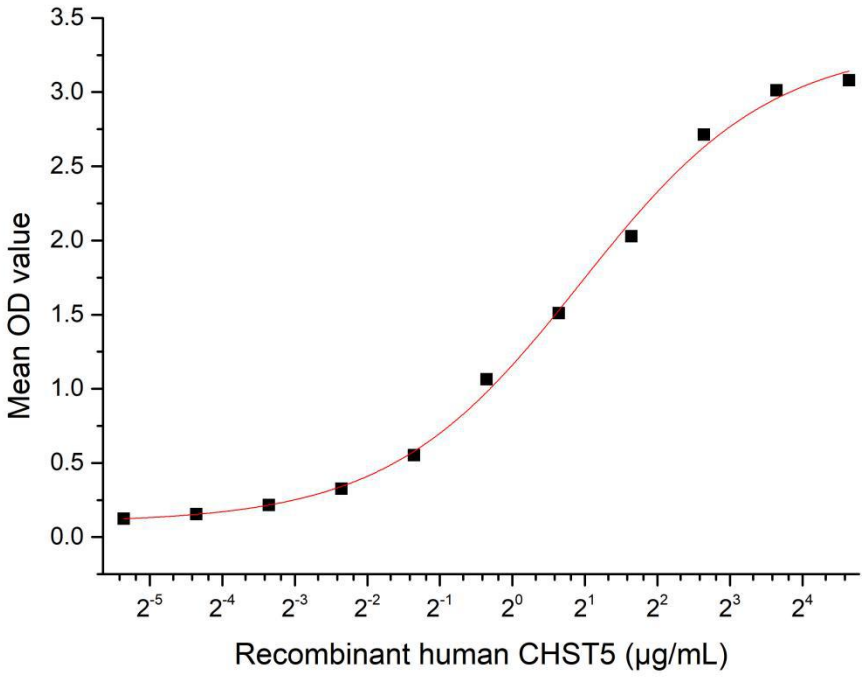


**Figure 1. The binding activity of recombinant human CHST5 and mouse MUC2**

## [ IDENTIFICATION ]

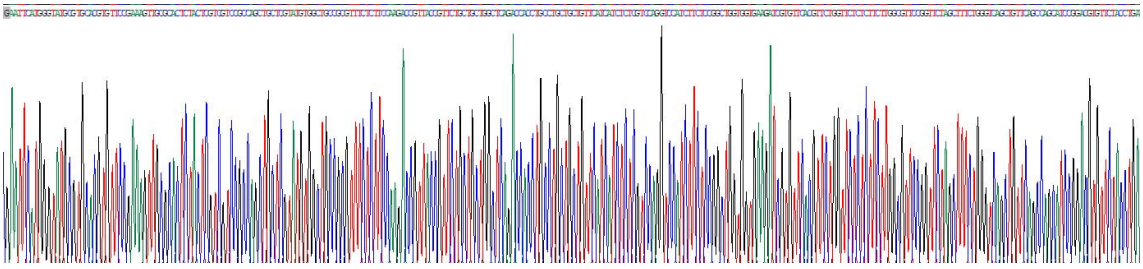

**Figure 2. Gene Sequencing (extract)**

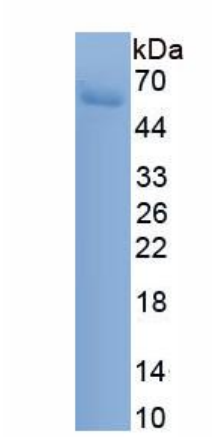


**Figure 3. SDS-PAGE**

**Sample: Active recombinant CHST5, Human**

## [ IMPORTANT NOTE ]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.