

## KAT6B (MYST4), Active

Recombinant human protein expressed in Sf9 cells

Catalog # **K315-381BG**

Lot # E3187-8

### Product Description

Recombinant human KAT6B (MYST4) (657-1069; contains the catalytic domain) was expressed by baculovirus in Sf9 insect cells using an N-terminal GST tag. The gene accession number is [NM\\_012330](#).

### Gene Aliases

KAT6B; MYST4; DKFZp313G1618; FLJ90335; KIAA0383; MORF; MOZ2; qkf; querkopf

### Formulation

Recombinant protein stored in 50mM Tris-HCl, pH 7.5, 150mM NaCl, 10mM glutathione, 0.1mM EDTA, 0.25mM DTT, 0.1mM PMSF, 25% glycerol.

### Storage and Stability

Store product at  $-70^{\circ}\text{C}$ . For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

### Scientific Background

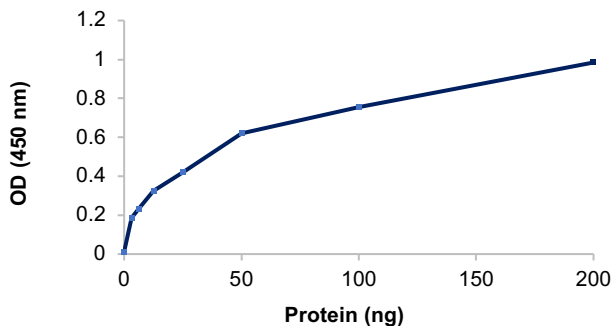
KAT6B is the catalytic subunit of the histone acetyltransferase (HAT) elongator complex, which is ubiquitously expressed in adult human tissues. KAT6B is a 1,781aa-residue protein that contains a strong transcriptional repression domain at its N terminus and a highly potent activation domain at its C terminus (1). These domains of KAT6B may be involved in both positive and negative regulation of transcription and also involved in cerebral cortex development. KAT6B is important for cellular aging, proliferation, positive and negative transcriptional regulation and DNA damage repair (2).

### References

1. Champagne, N. et.al: Identification of a human histone acetyltransferase related to monocytic leukemia zinc finger protein. J. Biol. Chem. 274: 28528-28536, 1999.
2. Pena AN, et.al: The role of the MORF/MRG family of genes in cell growth, differentiation, DNA repair, and thereby aging. DOI: 10.1196/annals: 299-305, April 2007.

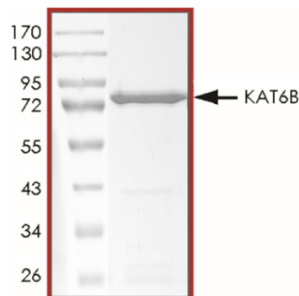
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### Specific Activity



The specific activity of KAT6B (MYST4) was determined to be **350 ng/min/mg** as per activity assay protocol.

### Purity



The purity of KAT6B (MYST4) was determined to be **>95%** by densitometry. Approx. MW **76kDa**.

## KAT6B (MYST4), Active

Recombinant human protein expressed in Sf9 cells

Catalog #	K315-381BG
Specific Activity	350 ng/min/mg
Lot #	E3187-8
Purity	>95%
Concentration	0.1 µg/µl
Stability	1yr at $-70^{\circ}\text{C}$ from date of shipment
Storage & Shipping	Store product at $-70^{\circ}\text{C}$ . For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles. Product shipped on dry ice.

# Activity Assay Protocol

## Reaction Components

### Active Acetyltransferases (Catalog #: K315-381BG)

Active KAT6B (MYST4) (0.1µg/µl) diluted with Acetyltransferase Dilution Buffer (Catalog #: A21-09) and assayed as outlined in sample activity plot. (Note: these are suggested working dilutions and it is recommended that the researcher perform a serial dilution of Active KAT6B (MYST4) for optimal results).

### Acetyltransferase Dilution Buffer (Cat. #: A21-09)

Acetyltransferase Assay Buffer (Catalog #: A01-09) diluted at a 1:4 ratio (5X dilution) with 50 ng/µl BSA solution.

### Acetyltransferase Assay Buffer (Cat. #: A01-09)

Buffer components: 250mM Tris-HCl, pH 8.0, 0.5mM EDTA, 25% glycerol. Add 2mM DTT to Acetyltransferase Assay Buffer prior to use.

### Acetyl-CoA Solution

Acetyl Co-enzyme A sodium salt (Sigma, Cat. # A2056), was diluted in 10mM sodium acetate, pH 5.0 to make a stock solution at a final concentration of 500 µM.

### Substrate (Catalog #: H13-58)

Histone H4 Peptide (1-21) diluted in distilled H<sub>2</sub>O to a final concentration of 0.5 mg/ml.

### Standard

Acetylated Histone H4 peptide (1-21) (Catalog #: H13-358) may be used as a standard after conjugating with dextran (prepared by researcher).

### Acetylated Histone Lysine Detection Antibody

The HRP conjugated anti-acetylated lysin antibody was from Immunechem (Catalog#: ICP 0381).

## Assay Protocol

- Step 1.** Dilute Histone H4 Peptide (1-21) (**Substrate**) in 10mM Na<sub>2</sub>CO<sub>3</sub> to 1µg/ml. Dilute Acetylated Histone H4 conjugate with dextran to 0.05ng/µl (**Standard**), then make 3-fold dilution for 8 dilutions (standard). Add 50µl/well of either the Histone H4 Peptide or Standard to 94 wells of a 96 well ELISA plate, leaving 2 wells without coating as **Blank** control. Incubate in 4°C overnight.
- Step 2.** Discard solution. Wash plate 3 times with ELISA Wash buffer (1X PBS with 0.05% Tween-20).
- Step 3.** Block plate with 200µl/well of 5% milk in PBS. Incubate at room temperature for 1 hour.
- Step 4.** Wash the plate by repeating Step 2.
- Step 5.** Thaw the Active KAT6B, Acetyltransferase Assay Buffer, and Acetyltransferase Dilution Buffer on ice.
- Step 6.** Add the following reaction components to substrate coated wells, bringing the initial reaction volume up to 40µl.  
**Component 1.** 10µl of diluted Active KAT6B (MYST4) (Catalog #K315-381BG)  
**Component 2.** 30µl of Acetyltransferase Assay Buffer (Catalog #: A01-09)
- Step 7.** Add 40µl of Acetyltransferase Dilution Buffer to **Standard** wells and **Blank** control wells.
- Step 8.** Initiate the reaction by the addition 10µl of 500 µM Acetyl -CoA solution bringing the final volume up to 50µl, and a final concentration of Acetyl -CoA of 100 µM. Incubate the mixture at 37°C for 45 minutes.
- Step 9.** Wash the plate by repeating step 2.
- Step 10.** Dilute HRP conjugated anti-acetyl lysine antibody to 0.2 ng/ml in PBS with 0.1% BSA. Add 50µl/well and incubate at room temperature for one hour.
- Step 11.** Discard solution and wash plate 6 times with ELISA Wash buffer.
- Step 12.** Add 50µl/well of TMB Substrate and incubate approximately 10 minutes for blue color development.
- Step 13.** Stop the reaction by adding 50µl/well of 2M sulfuric acid, turning the blue color to yellow.
- Step 14.** Read the absorbance in TECAN microplate reader at 450 nm and 570 nm.
- Step 15.** Calculate average duplicate readings for sample wells, standard wells and blank wells, if required.
- Step 16.** Generate a standard curve as OD value versus amount of standard at each concentration point. Then calculate the corresponding ng of acetylated product from the standard curve.
- Step 17.** Calculate the KAT specific activity as outlined below.

### KAT Specific Activity (SA) (ng/min/mg)

$$\text{KAT Activity (ng/min/mg)} = \text{Acetylated product (ng)} / (\text{Reaction time in min}) * (\text{Enzyme amount in mg})$$

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# SAFETY DATA SHEET

## Article 1 - Product Identification

**Product Name: KAT6B (MYST4), Active**

**Catalog # K315-381BG**

*This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.*

Manufacturer's Name: SignalChem Biotech Inc.  
 Street Address: 110-13120 Vanier Place  
 City, Prov. Postal Code: Richmond, BC, V6V 2J2  
 Fax: 604-232-4601  
 EMERGENCY PHONE: 604-232-4600

## Article 2 - Hazard Identification

- **WHMIS Classification:** Not WHMIS controlled.
- **GHS classification:** Skin irritation (Category 3); Eye irritation (Category 2B).
- **Hazard Pictograms:** none.
- **Signal words:** Warning.
- **Hazard statements:** Causes mild skin irritation (H316); Causes eye irritation (H320).
- **Precautionary statements:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305 + P351 + P338).
- **Other hazards:** none known.

## Article 3 - Composition/Information on Ingredients

**Chemical Characterization:** Mixtures.

**Description:** This product consists of the substances listed below.

Common name	Chemical name	CAS-No.	Concentration
Glycerol	Glycerol	56-81-5	≤25%
NaCl	Sodium chloride	7647-14-5	≤1.753 %
Tris-HCl; Tris (hydroxymethyl) aminomethane hydrochloride	2 - Amino - 2 - (hydroxymethyl) propane - 1, 3 - diol hydrochloride	1185-53-1	<0.8%
Glutathione	Glutathione	70-18-8	0.307%
Protein		No data available	≤0.02%
DTT; Dithiothreitol	(R*,R*)-1,4-Dimercaptobutane-2,3-diol	3483-12-3	0.0038%
EDTA	Ethylenediaminetetraacetic acid	6381-92-6	0.0037%
PMSF; Phenylmethanesulfonyl fluoride	α-Toluenesulphonyl fluoride	329-98-6	0.002%

## Article 4 - First-aid Measures

- **General information:** Consult a physician by providing the SDS.
- **After inhalation:** Breathe in fresh air. If cannot breathe, give artificial respiration and consult a physician.
- **After skin contact:** Immediately wash with soap and plenty of water and rinse thoroughly. Consult a physician.
- **After eye contact:** Rinse opened eyes with plenty of water for at least 15 minutes. Consult a physician.
- **After swallowing:** rinse the mouth with plenty of water and consult a physician.

## Article 5 - Fire-fighting Measures

- **Suitable extinguishing media:** Use water spray, extinguishing powder, carbon dioxide, or other appropriate measure that is suitable to the environment.
- **Specific hazards arising from the substance or mixture:** None known.
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary.

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## Article 6 – Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Apply standard laboratory practices and personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation.
- **Environmental precautions:** Do not allow to enter drains.
- **Methods and materials for containment and cleaning up:** Absorb on sand or vermiculite and place in closed containers for disposal.

## Article 7 - Handling and Storage

- **Precautions for safe handling:** Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.
- **Conditions for safe storage:** Store in a dry and well-ventilated place in -70 °C. Keep container upright and tightly closed.

## Article 8 - Exposure Controls/Personal Protection

- **Components with limit monitoring values at workplace:**  
Glycerol (CAS-No: 56-81-5)

Values	Control parameters	Regulations
TWA	10 mg/m <sup>3</sup> for mist	British Columbia, Canada
TWA	3 mg/m <sup>3</sup> for respirable mist	British Columbia, Canada
TWA	10 mg/m <sup>3</sup>	Alberta, Canada
TWAEV	10 mg/m <sup>3</sup>	Ontario, Canada
TWAEV	10 mg/m <sup>3</sup>	Quebec, Canada
TWA	10 mg/m <sup>3</sup>	USA

- **Appropriate engineering controls:**  
Apply adequate ventilation including mechanical exhaust or laboratory fume hood. Follow standard laboratory practices.
- **Individual protection measures:**  
**Respiratory protection:**  
Use appropriate respirator if there is inadequate ventilation by following the government standards.  
**Hand protection:**  
Wear gloves and use proper glove removal technique to avoid skin contact. Discard gloves after use by following the applicable laboratory regulations. Wash and dry hands.  
**Eye/face protection:**  
Safety goggles with side-shields approved under appropriate government standards.  
**Skin/body protection:**  
Use appropriate clothing, footwear and any additional protection measures to protect from splashing or contamination.

## Article 9 – Physical and Chemical Properties

<b>Appearance:</b> Colorless fluid.	<b>Danger of explosion:</b> Product does not present an explosion hazard.
<b>Odour/Odour Threshold:</b> Not determined.	<b>Explosion limits:</b> Lower: 0.9 Vol %; Upper: 0.0 Vol %.
<b>pH:</b> Not available.	<b>Decomposition temperature:</b> Not available.
<b>Melting point/freezing point:</b> Not determined.	<b>Vapor pressure at 20 °C:</b> 0.1 hPa
<b>Boiling point/Boiling range:</b> 100 °C.	<b>Density:</b> Not determined.
<b>Flash point:</b> > 100 °C.	<b>Relative density:</b> Not determined.
<b>Flammability (solid, gaseous):</b> Not determined.	<b>Vapor density:</b> Not determined.
<b>Ignition temperature:</b> 400 °C.	<b>Evaporation rate:</b> Not determined.
<b>Auto-igniting:</b> Product is not self-igniting.	<b>Solubility in / Miscibility with Water:</b> Fully miscible.

## Article 10 - Stability and Reactivity

- **Reactivity:** Stable under recommended transport and storage conditions.
- **Chemical stability:** Stable under recommended transport and storage conditions.
- **Possible hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heat and moisture.
- **Incompatible materials:** Strong acids/bases, strong oxidizing/reducing agents.
- **Hazardous decomposition products:** Carbon oxides may formed under fire conditions; no known decomposition information for other decomposition products.

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## Article 11 - Toxicological Information

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- **Acute toxicity:** Not available.
- **LD/LC50:** Not available.
- **Skin corrosion/irritation:** Not available.
- **Serious eye damage/eye irritation:** Not available.
- **Respiratory or skin sensitization:** Not available.
- **Germ cell mutagenicity:** Not available.
- **Carcinogenicity:** No components are listed in IARC, or NTP, or OSHA, or ACGIH.
- **Reproductive toxicity:** Not available.
- **Teratogenicity:** Not available.
- **Specific target organ toxicity - single exposure/ - repeated exposure (GHS):** Not available.
- **Aspiration hazard:** Not available.
- **Potential health effects:**
  - Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
  - Ingestion:** May be harmful if swallowed.
  - Skin:** May be harmful if absorbed through skin. May cause skin irritation.
  - Eyes:** May cause eye irritation.
- **Signs and Symptoms of Exposure:**
  - Prolonged or repeated exposure can cause: Nausea, Dizziness.
- **Synergistic effects:** Not available.

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## Article 12 - Ecological Information

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- **Eco-toxicity:** Not applicable.
- **Biodegradability:** Not applicable.
- **Bio-accumulative potential:** Not applicable.
- **Mobility in soil:** Not applicable.
- **PBT and vPvB assessment:** Not applicable.
- **Other adverse effects:** Not applicable.

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## Article 13 - Disposal Considerations

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- **Disposal methods:** In accordance to applicable national, regional, or local laws and regulations. For additional handling information and protection of employees please refer to Article 7 and 8.
- **Contaminated packaging:** Disposal should be made in accordance to official regulations. Use water or cleansing agents to clean the area.

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## Article 14 - Transport Information

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- **DOT:** Not dangerous goods.
- **IMDG:** Not dangerous goods.
- **IATA:** Not dangerous goods.

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## Article 15 - Regulatory Information

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- **WHMIS Classification:** Non-hazardous.
- **GHS label elements:** Not applicable.
- **Signal word:** Not applicable.
- **Hazard statements:** Not applicable.

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## Article 16 - Other Information

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The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.

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