SIGNALCHEM

Catalog #	Aliquot Size
T18-57GN-100	100 µg
T18-57GN-200	200 µg
T18-57GN-500	500 µg

Tau K18 (P61L) Protein Monomer

Recombinant protein expressed in E. coli cells

Catalog # T18-57GN

Lot # E4198-34

Product Description

Recombinant tag-free human Tau K18 (P61L) Protein Monomer was expressed in E. coli cells. The protein accession number is P10636.

Alternative Names

Microtubule-associated protein tau; MAPT; MAP; Paired Helical Filament-Tau, Phf-Tau, Neurofibrillary Tangle Protein; G Protein Beta1/Gamma2 Subunit-Interacting Factor 1; Isoform 4

Formulation

Recombinant protein stored in 10mM HEPES, pH 7.4, 100mM NaCl.

Storage and Stability

Store product at –70oC. 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

Alzheimer's Disease (AD) is the most common neurodegenerative disease, affecting 10% of seniors over the age of 65 (1). It was named after Alois Alzheimer, a German scientist who discovered tangled bundles of fibrils where neurons had once been in the brain of a deceased patient in 1907 (2). Tau (tubulin-associated unit) is normally located in the axons of neurons where it stabilizes microtubules. Tauopathies such as AD are characterized by neurofibrillary tangles containing hyperphosphorylated tau fibrils (3). There are six isoforms of tau in the adult human brain: three with four repeat units (4R) and three with three repeat units (3R) (4). K18 is a truncated form of human tau containing only the 4 microtubule binding repeats (5). P301L (PL) is a mutation where proline is replaced by leucine at codon 301 of tau, and has been linked to frontotemporal dementia (6).

References

1. www.alz.org/alzheimers-dementia/facts-figures
2. Alzheimer, A. Über eine eigenartige Erkrankung der Hirnrinde. Allg. Z. Psychiatr. Psych.-Gerichtl. Med. 64, 146–148 (1907)
3. Matsumoto, G. et al. (2018). Int J Mol Sci. 19, 1497.
4. Goedert, M. and Spillantini, M. G. (2017). Mol Brain. 10:18.
5. Guo, J. and Lee, M.Y. (2013). FEBS Lett. 587(6): 717-723.
6. Alberici, A. et al. (2004). J Neurol Neurosurg Psychiatry. 75:1607-1610.

Sample Data

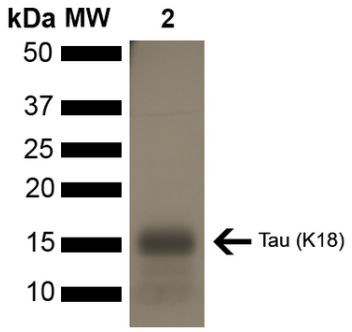

Figure 1. SDS-PAGE of ~16 kDa Human Tau Protein K18 (P61L) Monomer (Cat# T18-57GN). Lane 1: MW Ladder. Lane 2: Tau Protein Monomer (Cat# T18-57GN).

Tau K18 (P61L) Protein Monomer

Recombinant protein expressed in E. coli cells

Catalog #	T18-57GN
Lot #	E4198-34
Purity	>95% by SDS-PAGE analysis
Concentration	2µg/µl
Stability	1yr at –70°C from date of shipment
Storage & Shipping	Store product at –70°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.

To place your order, please contact us by phone 1-866-9KINASE (54-6273), 1-(604)-232-4600, fax 1-604-232-4601 or by email: orders@signalchem.com - www.signalchem.com

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.

SAFETY DATA SHEET

Article 1 - Product Identification and Use

Product Name: Tau K18 (P61L) Protein Monomer **Catalog # T18-57GN**

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

Emergency Overview: The product contains no substances which at their given concentration, are considered to be hazardous to health.
WHMIS Classification: Not WHMIS controlled
GHS Classification: Not a dangerous substance according to GHS.

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
Sodium Chloride	Sodium Chloride	7647-14-5	0.72%
HEPES	2-[4-(2-hydroxyethyl)piperazin-1-yl]ethanesulfonic acid	7365-45-9	0.29%
Protein	-	-	0.20%

Article 4 – First-aid Measures

- **General information:** Consult a physician by providing the SDS.
- **After inhalation:** Move to fresh air. If cannot breathe, give artificial respiration and consult a physician.
- **After skin contact:** Remove contaminated clothing. Immediately wash with soap and plenty of water and rinse thoroughly. Wash contaminated clothing before re-use.
- **After eye contact:** Check for and if possible, remove contact lenses. Rinse opened eyes with plenty of water for at least 15 minutes.
- **After swallowing:** If the patient is conscious, 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.

SAFETY DATA SHEET

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 sate 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 -20 °C. Keep container upright and tightly closed.

Article 8 - Exposure Controls/Personal Protection

- **Components with limit monitoring values at workplace:** N/A
- **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

Appearance: Colorless fluid.	**Danger of explosion:** Product does not present an explosion hazard.
Odour/Odour Threshold: Not determined.	**Explosion limits:** Not available.
pH: Not available.	**Decomposition temperature:** Not available.
Melting point/freezing point: Not determined.	**Vapor pressure at 20 °C:** Not determined.
Boiling point/Boiling range: Not determined.	**Density:** Not determined.
Flash point: Not determined.	**Relative density:** Not determined.
Flammability (solid, gaseous): Not determined.	**Vapor density:** Not determined.
Ignition temperature: Not determined	**Evaporation rate:** Not determined.
Auto-igniting: Product is not self-igniting.	**Solubility in / Miscibility with Water:** 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:** None determined.
- **Incompatible materials:** Avoid contact with metals (aluminum, mercury, copper, lead, zinc) and acids. Do not dispose of Sodium Azide or other chemicals down the drain.
- **Hazardous decomposition products:** May emit toxic fumes under normal fire conditions. Sodium azide can react with heavy metals to form explosive azides.

SAFETY DATA SHEET

Article 11 - Toxicological Information

- **Acute toxicity:** Not available.
- **LD/LC50:** Sodium azide: LD50 Oral: 27mg/kg (rat); LD50 Skin: 20mg/kg (rabbit).
- **Skin corrosion/irritation:** May cause mild irritation. Prolonged and extensive skin contact may result in absorption with systemic symptoms similar to ingestion.
- **Serious eye damage/eye irritation:** May cause irritation.
- **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: Ingestion of sodium azide has been reported to cause shortness of breath, nausea, vomiting, restlessness, diarrhea, lowering of blood pressure (hypotension) and collapse.
  Skin: May be harmful if absorbed through skin. May cause skin irritation.
  Eyes: May cause eye irritation.
- **Signs and Symptoms of Exposure:** Not available.
- **Synergistic effects:** Not available.

Article 12 - Ecological Information

- **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.

Article 13 - Disposal Considerations

- **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.

Article 14 - Transport Information

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

Article 15 – Regulatory Information

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

Article 16 - Other Information

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.