

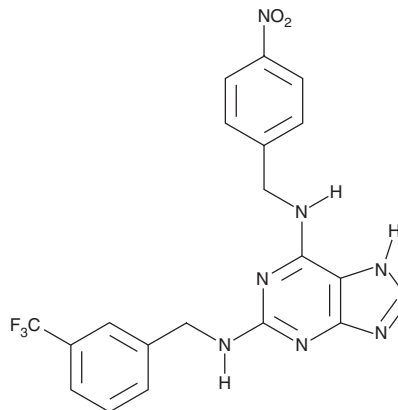
# PRODUCT INFORMATION



## TNP

Item No. 21189

**CAS Registry No.:** 519178-28-0  
**Formal Name:** N<sup>6</sup>-[[4-nitrophenyl)methyl]-N<sup>2</sup>-[[3-(trifluoromethyl)phenyl)methyl]-9H-purine-2,6-diamine  
**Synonyms:** IP<sub>3</sub>K Inhibitor, IP<sub>6</sub>K Inhibitor  
**MF:** C<sub>20</sub>H<sub>16</sub>F<sub>3</sub>N<sub>7</sub>O<sub>2</sub>  
**FW:** 443.4  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 227, 260, 289 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

## Laboratory Procedures

TNP is supplied as a crystalline solid. A stock solution may be made by dissolving the TNP in the solvent of choice, which should be purged with an inert gas. TNP is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of TNP in ethanol is approximately 2 mg/ml and approximately 30 mg/ml in DMSO and DMF.

TNP is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, TNP should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. TNP has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

## Description

TNP is a cell-permeable inhibitor of inositol-1,4,5-trisphosphate 6-kinase 1 (IP<sub>6</sub>K1; IC<sub>50</sub> = 0.55 μM; K<sub>i</sub> = 0.24 μM) and IP<sub>3</sub>K (IC<sub>50</sub> = 10.2 μM; K<sub>i</sub> = 4.3 μM) that binds to the ATP-binding sites of both enzymes.<sup>1,2</sup> TNP reduces IP<sub>7</sub> and IP<sub>8</sub> levels (IC<sub>50</sub>s = ~3 and 1 μM, respectively) and inhibits insulin release in MIN6 cells.<sup>1</sup> It increases intracellular calcium levels in a concentration-dependent manner in HL-60 cells, potentially due to a 2- to 3-fold accumulation of IP<sub>3</sub>, and induces degranulation in mast cells.<sup>3</sup>

## References

1. Padmanabhan, U., Dollins, D.E., Fridy, P.C., *et al.* Characterization of a selective inhibitor of inositol hexakisphosphate kinases: Use in defining biological roles and metabolic relationships of inositol pyrophosphates. *J. Biol. Chem.* **284**(16), 10571-10582 (2009).
2. Chang, Y.-T., Choi, G., Bae, Y.-S., *et al.* Purine-based inhibitors of inositol-1,4,5-trisphosphate-3-kinase. *Chembiochem* **3**(9), 897-901 (2002).
3. Stokes, A.J., Shimoda, L.M., Lee, J.W., *et al.* Fcε RI control of Ras via inositol (1,4,5) trisphosphate 3-kinase and inositol tetrakisphosphate. *Cell Signal.* **18**(5), 640-651 (2006).

### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/01/2022

## CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM