

Store at
-20°C
#50902**TPCA-1**

5 mg

**Cell Signaling**
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For Research Use Only. Not for Use in Diagnostic Procedures.**Background**

TPCA-1 blocks NF-κB signaling and suppresses the transcription of several pro-inflammatory cytokines through inhibition of the IκB kinase subunit IKKβ (IKK2). Studies show that TPCA-1 specifically inhibits IKKβ (IC₅₀ of 17.9 nM) and reduces inflammation and antigen-induced T cell proliferation in murine collagen-induced arthritis (1). TPCA-1 prevents recruitment of the transcription factor STAT3 to upstream kinases through interaction with the SH2 domain of STAT3. This limits the ability of cytokines and tyrosine kinases to induce STAT3 activity, which inhibits the ability of STAT3 to regulate cell growth and apoptosis. Treatment of non-small cell lung cancer (NSCLC) cells with TPCA-1 represses cell proliferation, suggesting that TPCA-1 may be effective in treating some forms of cancer (2). Studies have examined the ability of TPCA-1 to mediate the inflammatory response through control of IKKβ and STAT3 signaling in animal models of arthritis (1), chronic periodontitis (3), and nasal epithelial inflammation (4).

Molecular FormulaC₁₂H₁₀FN₃O₂S**Molecular Weight**

279.3 g/mol

Purity

>98%

CAS

507475-17-4

Solubility

Soluble in DMSO at 30 mg/mL.

Storage

Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

Directions for Use

TPCA-1 is supplied as a lyophilized powder. For a 15 mM stock, reconstitute 5 mg of powder in 1.19 mL of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

Background References

1. Podolin, P.L. et al. (2005) *J Pharmacol Exp Ther* 312, 373-81.
2. Nan, J. et al. (2014) *Mol Cancer Ther* 13, 617-29.
3. Wang, B. et al. (2021) *Mol Oral Microbiol* 36, 192-201.
4. Sachse, F. et al. (2011) *Rhinology* 49, 168-73.

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