

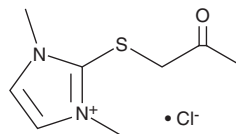
# PRODUCT INFORMATION



## TG2-IN-1 (chloride)

Item No. 42340

**CAS Registry No.:** 135273-74-4  
**Formal Name:** 1,3-dimethyl-2-[(2-oxopropyl)thio]-1H-imidazolium, monochloride  
**Synonyms:** D003, NTU283, R283, TG2 Inhibitor 1, Transglutaminase 2-IN-21, Transglutaminase 2 Inhibitor 1  
**MF:** C<sub>8</sub>H<sub>13</sub>N<sub>2</sub>OS • Cl  
**FW:** 220.7  
**Purity:** ≥98%  
**Supplied as:** A 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

TG2-IN-1 (chloride) is supplied as a solid. Aqueous solutions of TG2-IN-1 (chloride) can be prepared by directly dissolving the solid in aqueous buffers. TG2-IN-1 (chloride) is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

TG2-IN-1 is an irreversible inhibitor of transglutaminase 2 (TG2).<sup>1</sup> It inhibits guinea pig liver TG2 (IC<sub>50</sub> = 4 μM) and inhibits recombinant human Factor XIIIa in a concentration-dependent manner.<sup>1,2</sup> TG2-IN-1 (20-500 μM) reduces γ-glutamyl-ε-lysine isopeptide levels, a marker of TG2 activity, in SH-SY5Y cells but, paradoxically, potentiates amyloid-β-induced increases in γ-glutamyl-ε-lysine isopeptide levels in the same cells. It also promotes amyloid-β-induced apoptosis in SH-SY5Y cells.<sup>3</sup>

### References

1. Griffin, M., Mongeot, A., Collighan, R., *et al.* Synthesis of potent water-soluble tissue transglutaminase inhibitors. *Bioorg. Med. Chem. Lett.* **18(20)**, 5559-5562 (2008).
2. Heil, A., Weber, J., Büchold, C., *et al.* Differences in the inhibition of coagulation factor XIII-A from animal species revealed by Michael Acceptor- and thioimidazol based blockers. *Thromb. Res.* **131(5)**, e214-e222 (2013).
3. Zhang, J., Ding, Y.-R., and Wang, R. Inhibition of tissue transglutaminase promotes Aβ-induced apoptosis in SH-SY5Y cells. *Acta Pharmacol. Sin.* **37(12)**, 1534-1542 (2016).

#### 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.

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