

# PRODUCT INFORMATION



## Tandospirone

Item No. 40436

CAS Registry No.: 87760-53-0

Formal Name: (3aR,4S,7R,7aS)-rel-hexahydro-2-[4-[4-(2-pyrimidinyl)-1-piperazinyl]butyl]-4,7-methano-1H-isoindole-1,3(2H)-dione

Synonym: SM-3997

MF:  $C_{21}H_{29}N_5O_2$

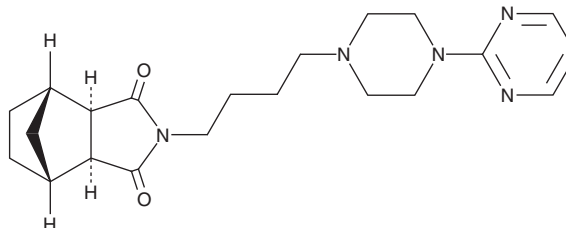
FW: 383.5

Purity:  $\geq 95\%$

Supplied as: A solid

Storage:  $-20^{\circ}\text{C}$

Stability:  $\geq 4$  years



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

### Laboratory Procedures

Tandospirone is supplied as a solid. A stock solution may be made by dissolving the tandospirone in the solvent of choice, which should be purged with an inert gas. Tandospirone is sparingly soluble (1-10 mg/ml) in ethanol.

### Description

Tandospirone is a partial agonist of the serotonin (5-HT) receptor subtype 5-HT<sub>1A</sub>.<sup>1</sup> It selectively binds to 5-HT<sub>1A</sub> receptors ( $K_i = 0.027 \mu\text{M}$ ) over 5-HT<sub>2</sub>, 5-HT<sub>1B</sub>, 5-HT<sub>1C</sub>, and 5-HT<sub>1D</sub> receptors ( $K_i$ s = 1.3, >100, 2.6, and >100  $\mu\text{M}$ , respectively), as well as  $\alpha_1$ -adrenergic receptors ( $\alpha_1$ -ARs),  $\alpha_2$ -ARs,  $\beta$ -ARs, and dopamine D<sub>1</sub> and D<sub>2</sub> receptors ( $K_i$ s = 1.6, 1.9, >100, 1.7, and 41  $\mu\text{M}$ , respectively). Tandospirone (0.1-100  $\mu\text{M}$ ) reduces forskolin-induced adenylate cyclase activity in rat hippocampal homogenates. *In vivo*, tandospirone (10 and 20 mg/kg) reduces immobility time in the forced swim test in mice.<sup>2</sup> Tandospirone (10 mg/kg) increases food intake and overall survival, as well as decreases body weight loss in a Yoshida hepatoma rat model of cancer cachexia.<sup>3</sup> Formulations containing tandospirone have been used in the treatment of depression.

### References

1. Hamik, A., Oksenberg, D., Fischette, C., *et al.* Analysis of tandospirone (SM-3997) interactions with neurotransmitter receptor binding sites. *Biol. Psychiatry*. **28(2)**, 99-109 (1990).
2. Wieland, S. and Lucki, I. Antidepressant-like activity of 5-HT<sub>1A</sub> agonists measured with the forced swim test. *Psychopharmacology (Berl.)* **101(4)**, 497-504 (1990).
3. Elkina, Y., Palus, S., Tschirner, A., *et al.* Tandospirone reduces wasting and improves cardiac function in experimental cancer cachexia. *Int. J. Cardiol.* **170(2)**, 160-166 (2013).

#### 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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