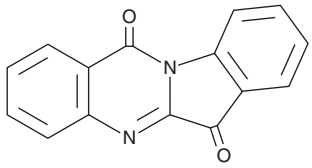
PRODUCT INFORMATION

Tryptanthrin

Item No. 17913

CAS Registry No.: 13220-57-0
Formal Name: indolo[2,1-b]quinazoline-6,12-dione
Synonym: NSC 349447
MF: $C_{15}H_8N_2O_2$
FW: 248.2
Purity: ≥95%
UV/Vis.: λ_{max}: 225, 252, 279, 311, 394 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

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

Tryptanthrin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tryptanthrin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Tryptanthrin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Tryptanthrin is an alkaloid tryptophan derivative originally isolated from various plants and found to have antimicrobial actions. Among its many actions in cells, it inhibits both 5-lipoxygenase and cyclooxygenase-2 (IC_{50}s = 600 and 64 nM, respectively).[1,2] Tryptanthrin suppresses angiogenesis *in vivo* and blocks signaling through VEGFR2 at the level of ERK1/2 signaling *in vitro*.3 It also prevents ERK signaling through Nrf2, reducing oxidative stress-induced hepatocytotoxicity.[4]

References

1. Pergola, C., Jazzar, B., Rossi, A., *et al.* On the inhibition of 5-lipoxygenase product formation by tryptanthrin: Mechanistic studies and efficacy *in vivo*. *Br. J. Pharmacol.* **165(3)**, 765-776 (2012).
2. Danz, H., Stoyanova, S., Wippich, P., *et al.* Identification and isolation of the cyclooxygenase-2 inhibitory principle in Isatis tinctoria. *Planta. Med.* **67(5)**, 411-416 (2001).
3. Liao, X., Zhou, X., Mak, N.K., *et al.* Tryptanthrin inhibits angiogenesis by targeting the VEGFR2-mediated ERK1/2 signalling pathway. *PLoS One* **8(12)**, (2013).
4. Moon, S.Y., Lee, J.-H., Choi, H.Y., *et al.* Tryptanthrin protects hepatocytes against oxidative stress via activation of the extracellular signal-regulated kinase/NF-E2-related factor 2 pathway. *Biol. Pharm. Bull.* **37(10)**, 1633-1640 (2014).

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