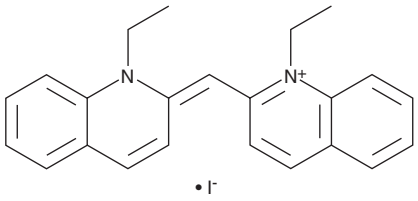
PRODUCT INFORMATION

Decynium-22

Item No. 29494

CAS Registry No.:	977-96-8
Formal Name:	1-ethyl-2-[(1-ethyl-2(1H)-quinolinylidene) methyl]-quinolinium, monoiodide
Synonym:	1,1′-Diethyl-2,2′-Cyanine
MF:	$C_{23}H_{23}N_2 \bullet I$
FW:	454.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 226, 491, 524 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

Decynium-22 is supplied as a crystalline solid. A stock solution may be made by dissolving the decynium-22 in the solvent of choice, which should be purged with an inert gas. Decynium-22 is soluble in the organic solvent DMSO at a concentration of approximately 1 mg/ml.

Decynium-22 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, decynium-22 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Decynium-22 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

Decynium-22 is an inhibitor of monoamine transporters and organic cation transporters (OCTs).[1] It inhibits the plasma membrane monoamine, serotonin (5-HT), norepinephrine, and dopamine monoamine transporters (IC_{50}s = 1.1, 7.9, 30, and 12.9 µM, respectively), and OCT2 and OCT3 (IC_{50}s = 10 and 0.2 µM, respectively) in radioligand binding assays. Decynium-22 also inhibits binding of the α_1-adrenergic receptor antagonist prazosin (Item No. 15023) in mouse hippocampal homogenates (IC_{50} = 60 nM).[2] It decreases the time stress-sensitive Wistar Kyoto, but not stress-resistant Long-Evans, rats spend immobile in the forced swim test, indicating antidepressant-like activity, when administered at doses of 1 and 10 µg/kg.[3]

References

1. Fraser-Spears, R., Krause-Heuer, A.M., Basiouny, M., *et al.* Comparative analysis of novel decynium-22 analogs to inhibit transport by the low-affinity, high-capacity monoamine transporters, organic cation transporters 2 and 3, and plasma membrane monoamine transporter. *Eur. J. Pharmacol.* **842**, 351-364 (2019).
2. Krause-Heuer, A.M., Fraser-Spears, R., Dobrowolski, J.C., *et al.* Evaluation of the antidepressant therapeutic potential of isocyanine and pseudoisocyanine analogues of the organic cation decynium-22. *Eur. J. Med. Chem.* **137**, 476-487 (2017).
3. Marcinkiewcz, C.A. and Devine, D.P. Modulation of OCT3 expression by stress, and antidepressant-like activity of decynium-22 in an animal model of depression. *Pharmacol. Biochem. Behav.* **131**, 33-41 (2015).

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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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