Certificate of Analysis

Product Name: **Tetrabenazine** **Catalog No.: 2175** **Batch No.: 3**

CAS Number: 58-46-8 EC Number: 200-383-6

IUPAC Name: (3*R*,11b*R*)-*rel*-1,3,4,6,7,11b-hexahydro-9,10-dimethoxy-3-(2-methylpropyl)-2*H*-benzo[*a*]quinolizin-2-one

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{19}H_{27}NO_3$

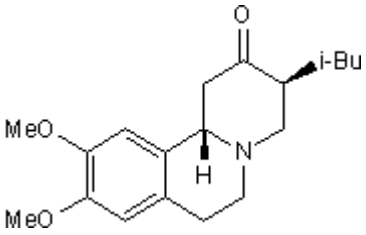
Batch Molecular Weight: 317.2

Physical Appearance: White solid

Solubility: ethanol to 30 mM
DMSO to 100 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.29 (Diethyl ether:Petroleum ether [1:1])

HPLC: Shows 99.7% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	71.89	8.57	4.41
Found	71.72	8.72	4.39

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Description:

Potent inhibitor of vesicular monoamine uptake; depletes stores of dopamine, serotonin and noradrenalin. Binds with high affinity (IC_{50}= 3.2 nM) to vesicular monoamine transporter (VMAT) in chromaffin granule membranes and displays higher affinity for VMAT2 than VMAT1. Also reported to block dopamine receptors. Causes behavioral depression; inhibits locomotor activity and produces hypothermia upon systemic administration in rats and mice.

Physical and Chemical Properties:

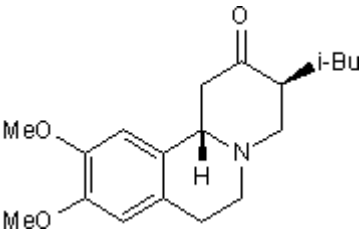
Batch Molecular Formula: $C_{19}H_{27}NO_3$

Batch Molecular Weight: 317.2

Physical Appearance: White solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

ethanol to 30 mM
DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Reches *et al* (1983) Tetrabenazine, an amine-depleting drug, also blocks dopamine receptors in rat brain. J.Pharmacol.Exp.Ther ***225*** 515. PMID: 6864517.

Scherman *et al* (1983) Characterisation of the monoamine carrier of chromaffin granule membrane by binding of [2-^{3}H] dihydrotetrabenazine. Proc.Natl.Acad.Sci.USA ***80*** 584.

Pettibone *et al* (1984) Tetrabenazine-induced depletion of brain monoamines: characterisation and interaction with selected antidepressants. Eur.J.Pharmacol. ***102*** 425. PMID: 6489435.

Peter *et al* (1996) Chimeric vesicular monoamine transporters identify structural domains that influence substrate affinity and sensitivity to tetrabenazine. J.Biol.Chem. ***271*** 2979. PMID: 8621690.