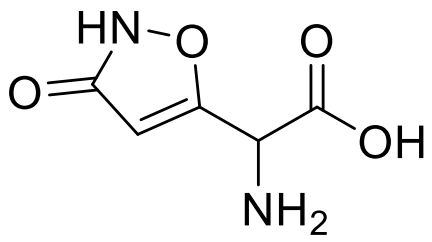
Product data sheet

MedKoo Cat#: 561191 Name: Ibotenic Acid CAS: 2552-55-8 Chemical Formula: $C_5H_6N_2O_4$ Exact Mass: 158.0328 Molecular Weight: 158.113	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Ibotenic Acid is a potent excitatory amino acid agonist. Ibotenic Acid causes motor depression, ataxia, and changes in mood. Ibotenic Acid is also a neurotoxin.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	5.0	31.62
Water	3.29	20.81

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	6.32 mL	31.62 mL	63.25 mL
5 mM	1.26 mL	6.32 mL	12.65 mL
10 mM	0.63 mL	3.16 mL	6.32 mL
50 mM	0.13 mL	0.63 mL	1.26 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Zinkand WC, Moore WC, Thompson C, Salama AI, Patel J. Ibotenic acid mediates neurotoxicity and phosphoinositide hydrolysis by independent receptor mechanisms. Mol Chem Neuropathol. 1992 Feb-Apr;16(1-2):1-10. doi: 10.1007/BF03159956. PMID: 1325800.

In vivo study

1. Karthick C, Periyasamy S, Jayachandran KS, Anusuyadevi M. Intrahippocampal Administration of Ibotenic Acid Induced Cholinergic Dysfunction via NR2A/NR2B Expression: Implications of Resveratrol against Alzheimer Disease Pathophysiology. Front Mol Neurosci. 2016 Apr 26;9:28. doi: 10.3389/fnmol.2016.00028. PMID: 27199654; PMCID: PMC4844917.
2. Marini G, Ceccarelli P, Mancia M. Effects of bilateral microinjections of ibotenic acid in the thalamic reticular nucleus on delta oscillations and sleep in freely-moving rats. J Sleep Res. 2000 Dec;9(4):359-66. doi: 10.1046/j.1365-2869.2000.00224.x. PMID: 11123522.

7. Bioactivity
Biological target:

Ibotenic acid has agonist activity at both the N-methyl-D-aspartate (NMDA) and trans-ACPD or metabolotropic quisqualate (Qm) receptor sites.

Product data sheet

In vitro activity

Ibo (ibotenic acid) induced stimulation of phosphoinositide (PI) hydrolysis, on the other hand, is unaffected by either of these treatments. This study therefore concludes that Ibo is capable of acting at both NMDA and trans-ACPD receptors in the CNS, although only activation of NMDA receptors is involved in Ibo neurotoxicity.

Reference: Mol Chem Neuropathol. 1992 Feb-Apr;16(1-2):1-10. https://pubmed.ncbi.nlm.nih.gov/1325800/

In vivo activity

In Figures 4A,B, results showed that IBO (ibotenic acid)-induced group exhibited significant ($P < 0.01$) down-regulation of α7-nAChR and up-regulation of m1AChR mRNA levels by $p < 0.001$ when compared to control groups. In RSV-treated groups, the expression of acetylcholine receptor, α7-nAChR and m1 AChR levels were significantly ($P < 0.05$) brought back when compared to IBO-induced rat groups.

Reference: Front Mol Neurosci. 2016 Apr 26;9:28. https://pubmed.ncbi.nlm.nih.gov/27199654/