

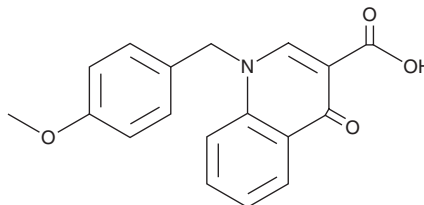
PRODUCT INFORMATION



BQCA

Item No. 15393

CAS Registry No.: 338747-41-4
Formal Name: 1,4-dihydro-1-[(4-methoxyphenyl)methyl]-4-oxo-3-quinolinecarboxylic acid
MF: C₁₈H₁₅NO₄
FW: 309.3
Purity: ≥98%
UV/Vis.: λ_{max}: 224, 315, 328 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

BQCA is supplied as a crystalline solid. A stock solution may be made by dissolving the BQCA in the solvent of choice, which should be purged with an inert gas. BQCA is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of BQCA in these solvents is approximately 0.2 mg/ml.

BQCA is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

BQCA is a highly selective positive allosteric modulator of the M₁ muscarinic acetylcholine receptor (mAChR), as it dose-dependently reduces the concentration of acetylcholine required to activate the M₁ receptor.¹ The effective range for potentiation of M₁ in cells by BQCA is 0.1 to 100 μM with an inflection point value of 845 nM when 3 nM acetylcholine is used.¹ BQCA displays no potentiation, agonism, or antagonism at other mAChRs at concentrations up to 100 μM.¹ It has excellent brain penetration and increases the firing rate of medial prefrontal cortex neurons *in vivo* in rats.² BQCA prevents scopolamine-induced memory deficits in both contextual fear conditioning and a spontaneous alternation task in mice.^{1,3} It also restores impairment in reversal learning in a mouse model of Alzheimer's disease and improves memory performance in rats.^{2,4}

References

1. Ma, L., Seager, M.A., Wittman, M., et al. *Proc. Natl. Acad. Sci. USA* **106**(37), 15950-15955 (2009).
2. Shirey, J.K., Brady, A.E., Jones, P.J., et al. *J. Neurosci.* **29**(45), 14271-14286 (2009).
3. Chambon, C., Jatzke, C., Wegener, N., et al. *Eur. J. Pharmacol.* **697**(1-3), 73-80 (2012).
4. Galloway, C.R., Lebois, E.P., Shagarabi, S., et al. *Pharmacology* **93**(1-2), 57-64 (2014).

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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