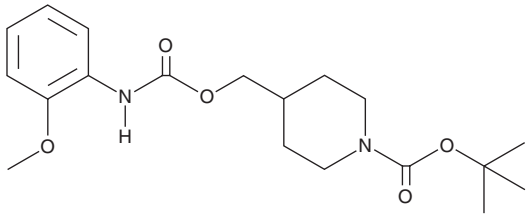
PRODUCT INFORMATION

GW 542573X

Item No. 43213

CAS Registry No.:	660846-41-3
Formal Name:	4-[[[[(2-methoxyphenyl) amino]carbonyl]oxy]methyl]-1-piperidinecarboxylic acid, 1,1-dimethylethyl ester
MF:	$C_{19}H_{28}N_2O_5$
FW:	364.4
Purity:	≥98%
Supplied as:	A 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

GW 542573X is supplied as a solid. A stock solution may be made by dissolving the GW 542573X in the solvent of choice, which should be purged with an inert gas. GW 542573X is sparingly soluble (1-10 mg/ml) in ethanol and DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of GW 542573X can be prepared by directly dissolving the solid in aqueous buffers. GW 542573X is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

GW 542573X is an activator of small-conductance calcium-activated potassium channel $K_{Ca}2.1$/SK1.[1] It increases current in an inside-out patch clamp assay using HEK293 cells expressing the human channel (EC_{50} = 8.2 µM). GW 542573X is selective for $K_{Ca}2.1$/SK1 over $K_{Ca}2.2$/SK2, $K_{Ca}2.3$/SK3, and intermediate-conductance calcium-activated potassium channel $K_{Ca}3.1$/IK in whole-cell patch clamp assays using HEK293 cells expressing the human channels at 10 µM, as well as the voltage-gated sodium channel $Na_v1.3$, N-type voltage-gated calcium channel $Ca_v2.2$, voltage-gated potassium channel $K_v1.3$, purinergic $P2X_{2/3}$ receptor, and α7 nicotinic acetylcholine receptor (nAChR) at 30 µM. *In vivo*, GW 542573X (15 mg/kg) decreases freezing time in contextual fear but not cued fear memory tests in mice when administered prior to the conditioning period.[2]

References

1. Hougaard, C., Jensen, M.L., Dale, T.J., *et al.* Selective activation of the SK1 subtype of human small-conductance Ca^{2+}-activated K^+ channels by 4-(2-methoxyphenylcarbamoyloxymethyl)-piperidine-1-carboxylic acid *tert*-butyl ester (GW542573X) is dependent on serine 293 in the S5 segment. *Mol. Pharmacol.* **76(3)**, 569-578 (2009).
2. Rice, C.A. and Stackman, R.W., Jr. The small conductance Ca^{2+}-activated K^+ channel activator GW542573X impairs hippocampal memory in C57BL/6J mice. *Neuropharmacology* **252:109960**, (2024).

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