Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@m2stage.hellobio.com

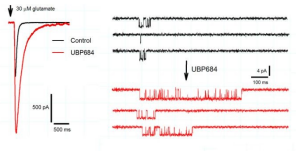
DATASHEET

UBP684

Product overview

Name	UBP684
Cat No	HB6158
Purity	>98%
Description	Novel NMDAR pan-PAM

Images



Biological Data

Biological description

UBP684 is a novel NMDAR PAM (positive allosteric modulator) which robustly potentiates responses at all GluN1/GluN2 subtypes and at neuronal NMDARs. UBP684 increases the maximal l-glutamate/glycine response while having minor subunit-specific effects on agonist potency.

UBP684 increases NMDAR channel open probability (P_o) and slows receptor deactivation time upon removal of L-glutamate but not glycine.

Docking studies suggest that UBP684 binds to the GluN1 and GluN2 LBD (ligand binding domain) interface supporting its potential ability in stabilizing the LBD closed conformation.

UBP684 binding is independent of agonist binding and its activity is independent of membrane voltage and redox state. UBP684 activity is also pH-dependent, with enhanced potentiation at lower pHs and inhibitory activity at high pH (e.g.8.4).

Solubility & Handling

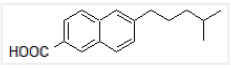
Storage instructions	-20°C
Solubility overview	Soluble in DMSO (100 mM)
Handling	University of Nebraska researchers recommend making up UBP684 as a 50 mM stock solution in DMSO and diluting it into physiological buffer up to 50 µM.

Please note that UBP684 is less soluble in physiological buffers that have mM levels of calcium.

UBP684 can be used in buffers usually used for studying NMDAR responses in Xenopus oocytes, however it may not work well in buffers used to investigate synaptic transmission.

Storage instructions	-20°C Calcium-free buffers can be used to improve compound solubility.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Chemical name	6-(4-methylpentyl)naphthalene-2-carboxylic acid
Molecular Weight	256.34
Chemical structure	
Molecular Formula	$C_{17}H_{20}O_2$
PubChem identifier	0
SMILES	O=C(O)c1ccc2cc(ccc2c1)CCCC(C)C
Source	Synthetic
InChi	InChI=1S/C17H20O2/c1-12(2)4-3-5-13-6-7-15-11-16(17(18)19)9-8-14(15)10-13/h6-12H,3-5H2,1-2H3,(H,18,19)
Appearance	White solid

References

Gating Effects of a Novel Allosteric Modulator at GluN1/GluN2A NMDA Receptors

Chopra et al (2015) FASEB 29 no.1

Mechanism and properties of positive allosteric modulation of N-methyl-d-aspartate receptors by 6-alkyl 2-naphthoic acid derivatives.

Sapkota et al (2017) Neuropharmacology 125:

PubMedID 28709671

A single-channel mechanism for pharmacological potentiation of GluN1/GluN2A NMDA receptors.

Chopra et al (2017) Sci Rep. 7(1)

PubMedID 28761055