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# DATASHEET

UBP145

## Product overview

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| **Name** | UBP145 |
| **Cat No** | HB4717 |
| **Alternative names** | UBP-145 |
| **Biological action** | Antagonist |
| **Purity** | >97% |
| **Description** | Selective antagonist for GluN2D subunit containing NMDA receptors |

## Biological Data

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| **Biological description** | Selective antagonist for GluN2D subunit containing NMDA receptors. Binds competitively at the glutamate site.<br><br>Displays ~10- fold selectivity for GluN2D-containing receptors over GluN2B (NR2B) or GluN2A (NR2A) containing receptors ($K_i$ values are 1.19, 7.99 and 11.53 at GluN1/GluN2D, GluN1/GluN2B and GluN1/GluN2A containing receptors respectively).<br><br>Inhibits synaptic NMDAR response. |

## Solubility & Handling

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| **Storage instructions** | -20°C |
| **Solubility overview** | Soluble in DMSO (100mM, gentle warming) |
| **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

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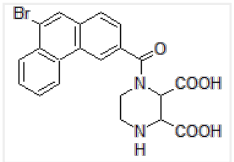
| **Chemical name** | 1-(9-bromophenanthrene-3-carbonyl)piperazine-2,3-dicarboxylic acid |
| **Molecular Weight** | 457.28 |
| **Chemical structure** |  |
| **Molecular Formula** | $C_{21}H_{17}BrN_2O_5$ |
| **PubChem identifier** | 56945293 |
| **SMILES** | C1CN([C@H]([C@H](N1)C(=O)O)C(=O)O)C(=O)C2=CC3=C(C=C2)C=C(C4=CC=CC=C43)Br |
| **Source** | Synthetic |
| **InChi** | InChI=1S/C21H17BrN2O5/c22-16-10-11-5-6-12(9-15(11)13-3-1-2-4-14(13)16)19(25)24-8-7-23-17(20(26)27)18(24)21(28)29/h1-6,9-10,17-18,23H,7-8H2,(H,26,27)(H,28,29)/t17-,18+/m0/s1 |
| **InChiKey** | HUVFBBHRFWAJAA-ZWKOTPCHSA-N |
| **Appearance** | Off-white solid |

## References

**N-methyl-D-aspartate (NMDA) receptor NR2 subunit selectivity of a series of novel piperazine-2,3-dicarboxylate derivatives: preferential blockade of extrasynaptic NMDA receptors in the rat hippocampal CA3-CA1 synapse.**

Costa et al (2009) J Pharmacol Exp Ther 331(2)
**PubMedID** 19684252

**GluN2B and GluN2D NMDARs dominate synaptic responses in the adult spinal cord.**

Hildebrand et al (2014) Sci Rep 13
**PubMedID** 24522697

**Different NMDA receptor subtypes mediate induction of long-term potentiation and two forms of short-term potentiation at CA1 synapses in rat hippocampus in vitro.**

Volianskis et al (2013) J Physiol. 591(4)
**PubMedID** 23230236

**Multiple roles of GluN2D-containing NMDA receptors in short-term potentiation and long-term potentiation in mouse hippocampal slices**

Eapen et al (2021) Neuropharmacology . 108833
**PubMedID** 34637787

**Differential regulation of STP, LTP and LTD by structurally diverse NMDA receptor subunit-specific positive allosteric modulators**

France et al (2022) Neuropharmacology 202:108840
**PubMedID** 34678377