

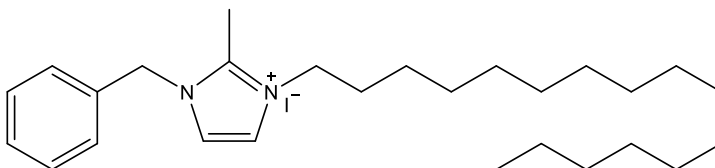
**Catalog # 10-4840**

**NH125**

CAS# 278603-08-0

1-Hexadecyl-2-methyl-3-(phenylmethyl)-1H-imidazolium iodide

Lot # JKM1208



NH125 was originally discovered as an antibacterial agent active against various Gram-positive and -negative bacteria via inhibition of histidine protein kinase.<sup>1</sup> It was also found to be a potent inhibitor of eukaryotic elongation factor 2 (eEF-2) kinase (IC<sub>50</sub> = 60 nM) with efficacy against a broad spectrum of human cancer cell lines.<sup>2</sup> Other studies have linked the anticancer effects of NH125 to induction of eEF2 phosphorylation.<sup>3,4</sup> NH125 has also been shown to engage the EIF2a-ATF4-CHOP axis resulting in induction of DR5 expression.<sup>5</sup> Treatment of glioma stem cells with NH125 resulted in a sustained decrease in tumor volume via activation of integrated stress response (ISR) and GADD45 pathways.<sup>5</sup>

- 1) Yamamoto *et al.* (2000), *Identification and Characterization of a Potent Antibacterial Agent, NH125, against Drug-resistant Bacteria*; *Biosci. Biotechnol. Biochem.* **64** 919
- 2) Arora *et al.* (2003), *Identification and characterization of an inhibitor of eukaryotic elongation factor 2 kinase against human cancer cell lines* *Cancer Res.* **63** 6894
- 3) Chen *et al.* (2011), *1-Benzyl-3-cetyl-2-methylimidazolium iodide (NH125) Induces Phosphorylation of Eukaryotic Elongation Factor-2 (eEF2) – A Cautionary Note on the Anticancer Mechanism of an eEF2 Kinase Inhibitor*; *J. Biol. Chem.* **286** 43951
- 4) Devkota *et al.* (2012), *Investigating the kinetic mechanism of inhibition of elongation factor 2 kinase by NH125: evidence of a common in vitro artifact*; *Biochemistry* **51** 2100
- 5) Sheikh *et al.* (2019), *An Integrated Stress Response Agent that Modulates DR5-Dependent TRAIL Synergy Reduces Patient-Derived Glioma Stem Cell Viability*; *Mol. Cancer Res.* **17** 1102

**PHYSICAL DATA**

Molecular Weight:	524.56
Molecular Formula:	C <sub>27</sub> H <sub>45</sub> N <sub>2</sub>
Purity:	>98% TLC
	NMR: (Conforms)
Solubility:	Soluble in DMSO (>25 mg/ml); Ethanol (>25 mg/mL)
Physical Description:	Off-white solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Store solutions at -20°C for up to 1 month.

**Materials provided by Focus Biomolecules are for laboratory research use only and are not intended for human or veterinary applications.**