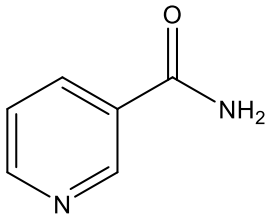
Catalog # 10-2840

Nicotinamide

CAS# 98-92-0

Pyridine-3-carboxylic acid amide; Nicotinic acid amide; Niacinamide; Vitamin B_3

Lot # X101428



Essential nutrient (amide form of Vitamin B_3) that is incorporated into cofactors NADH/NAD^+, important for ATP production and other key metabolic functions.[1] Transiently inhibits SIRT1/SIRT3 through feedback inhibition (IC_{50} ~ 50 µM)[2], but is quickly converted to NAD^+ in cells[3]. Also inhibits certain kinases (e.g. ROCK and CK1), making it a regulator of hPSC pluripotency, survival, and differentiation.[4] Inhibits differentiation and enhances functionality of hematopoietic stem/progenitor cells (HSPCs).[5]

References/Citations:

1) Zapata-Pérez *et al*. (2021), *NAD+ homeostasis in human health and disease*; EMBO Mol. Med., **13** e13943
2) Guan *et al*. (2014), *Mechanism of inhibition of the human sirtuin enzyme SIRT3 by nicotinamide: computational and experimental studies*; PLoS One, **9** e107729
3) Hwang and Song (2017), *Nicotinamide is an inhibitor of SIRT1 in vitro, but can be a stimulator in cells*; Cell. Mol. Life Sci., 74 3347
4) Meng *et al.* (2018), *Nicotinamide Promotes Cell Survival and Differentiation as Kinase Inhibitor in Human Pluripotent Stem Cells*; Stem Cell Reports, **11** 1347
5) Horwitz *et al*. (2014), *Umbilical cord blood expansion with nicotinamide provides long-term multilineage engraftment*; J. Clin. Invest., **124** 3121

PHYSICAL DATA

Molecular Weight:	122.13
Molecular Formula:	$C_6H_6N_2O$
Purity:	>99% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (50 mg/ml) and water (50 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied desiccated at room temperature for up to 2 years from the date of purchase. Solutions in DMSO or water may be stored at -20°C for up to 3 months.

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