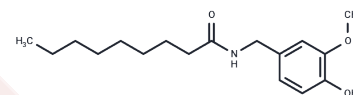


## Nonivamide

## Chemical Properties

CAS No. :	2444-46-4
Formula:	C17H27NO3
Molecular Weight:	293.40
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Nonivamide (Nonanoic acid vanillylamide) is found in herbs and spices. Nonivamide is an alkaloid from Capsicum species. Nonivamide is a flavoring ingredient. Nonivamide is an organic compound and a capsaicinoid. It is an amide of pelargonic acid and vanillylamine. It is present in chili peppers, but is commonly manufactured synthetically. It is more heat-stable than capsaicin.
Targets(IC50)	TRP/TRPV Channel
In vitro	Nonivamide, a synthetic derivative of natural capsaicin, demonstrates effective antifouling activity. Capsaicin exhibits 4d-EC50 values of 5.5±0.5 mg/L, 23±2 mg/L, 6.9 ±0.2 mg/L, and 15.6±0.4 mg/L in static toxicity tests with Pseudomonas putida, Lake Erie bacteria, Vibrio natriegens, and Vibrio parahaemolyticus, respectively. When treated with 1 mg/L of Nonivamide for 4 days, a significant growth inhibitory effect (p<0.01) is observed, with an EC50 value (4d-EC50) of 5.1 mg/L [1]. Nonivamide triggers calcium release from the ER and alters the transcription of growth arrest- and DNA damage-inducible transcripts (GADD153, GADD45α, GRP78/BiP, ATF3, CCND1, and CCNG2) similarly to ER stress-inducing agents. ER calcium flux is assessed by pretreating cells with 2.5 μM thapsigargin for 5 min, followed by 2.5 μM Nonivamide. TRPV1-overexpressing cells treated with 2.5 μM Nonivamide show marked increases in cytosolic calcium due to ER calcium release, and treatment with 1 μM Nonivamide results in approximately 50% loss in cell viability after 24 hours. BEAS-2B cells treated with 100 and 200 μM Nonivamide exhibit a shift in EIF2α-P levels and increased GADD153 mRNA and protein expression [2]. Nonivamide also reduces lipid accumulation comparably to CAP, with significant reductions of 5.34±1.03% (P<0.05) at 0.01 μM and 10.4±2.47% (P<0.001) at 1 μM [3].
Cell Research	Nonivamide is dissolved in ethanol to 1,000× stock solutions freshly each time and final ethanol concentration during the assays never exceeded 0.2% (v/v)[3]. In the MTT assay, the reduction of yellow tetrazolium salt MTT to a purple formazan by mitochondrial and ER enzymes is used as a measure for cell viability. Cells are seeded in 96-well plates and treated with 1 nM-10 μM CAP or Nonivamide with or without addition of 25-100 μM BCH or the corresponding ethanol concentration (0.1-0.2% (v/v), solvent control) for 12 days after initiation of differentiation. Cell culture media is exchanged every second day. On Day 12, 100 μL of the MTT working reagent (0.83 mg/mL MTT diluted in PBS/serum-free media (1:5)), is added to each well, and cells are incubated at 37°C for approximately 15 min. The MTT working solution is removed and the purple formazan formed during

## A DRUG SCREENING EXPERT

Cell Research	incubation is dissolved in 150 $\mu$ L DMSO per well. Absorbance is measured at 550 $\mu$ m with 690 $\mu$ m as reference wavelength using multiwell plate reader. The number of metabolically active cells is calculated relative to untreated control cells or the corresponding solvent control (100%)[3].
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### Solubility Information

Solubility	DMSO: 255 mg/mL (869.12 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (6.82 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.4083 mL	17.0416 mL	34.0832 mL
5 mM	0.6817 mL	3.4083 mL	6.8166 mL
10 mM	0.3408 mL	1.7042 mL	3.4083 mL
50 mM	0.0682 mL	0.3408 mL	0.6817 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

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