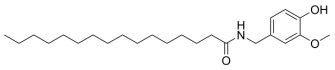
Palvanil

Cat. No.:	HY-137988
CAS No.:	69693-13-6
Molecular Formula:	$C_{24}H_{41}NO_3$
Molecular Weight:	391.59
Target:	TRP Channel
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Palvanil is a Capsaicin (HY-10448) analogue, shows strong desensitizing capability against the TRPV1 receptor. Palvanil shows anti-nociceptive and anti-inflammation effects[1][2].

In Vitro

Palvanil (0.1-1000 nM; 0-300 min) leads to calcium increasment in HEK-293 intracellular[1].
Palvanil (1-10 nM; 5 min) treatment desensitizes TRPV1 to the effect of Capsaicin significantly[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HEK-293 cells
Concentration:	0.1, 0.5, 1, 5, 10, 50, 100 and 1000 nM
Incubation Time:	0-300 min
Result:	Produced a dose-dependent increase in intracellular calcium with a EC_{50} of 0.65 nM.

Cell Viability Assay[1]

Cell Line:	HEK-293-TPRV1 cells
Concentration:	1-10 nM
Incubation Time:	5 min
Result:	Desensitized TRPV1 to the effect of Capsaicin significantly (IC_{50}=0.81 nM).

In Vivo

Palvanil (subcutaneous injection; 1 or 10 mg/kg; once) treatment shows hypothermic effect[2].
Palvanil (intraperitoneal injection; 100 μL (15 nM) per mouse; once) treatment reduces Capsaicin-induced bronchoconstriction[2].
Palvanil (intravenous injection; 0.5, 0.75, and 1 mg/kg; once) treatment shows antinociceptive effects on Formalin-induced nocifensive behavior[2].
Palvanil (intravenous injection; 0.5, 0.75, and 1 mg/kg; once) treatment inhibits Carrageenan-induced inflammation[2].
Palvanil (intravenous injection; 0.5 and 1 mg/kg; once daily; 7 days) reduces mechanical allodynia and thermal hyperalgesia in spared nerve injury (SNI) mice[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male CD-1 mice[2]
Dosage:	1 or 10 mg/kg
Administration:	Subcutaneous injection; 1 or 10 mg/kg; once
Result:	Led to a slight and short lasting hypothermic effect, produced late hyperthermia.

Animal Model:	Female BALB/C mice[2]
Dosage:	100 µL (15 nM) per mouse
Administration:	Intraperitoneal injection; 100 µL (15 nM) per mouse; once
Result:	Induced a significantly lower bronchoconstriction (from 0.47 to 0.605 cm H_2O/L/s).

Animal Model:	Male CD-1 mice received formalin[2]
Dosage:	0.5, 0.75, and 1 mg/kg
Administration:	Intravenous injection; 0.5, 0.75, and 1 mg/kg; once
Result:	Reduced the second phase of Formalin-induced nociceptive behaviour in a dose-dependent manner.

Animal Model:	Male C57BL/6J mice with acute inflammation induced by Carrageenan[2]
Dosage:	2.5 mg/kg
Administration:	Intravenous injection; 2.5 mg/kg; once
Result:	Reduced the volume of the oedema in the ipsilateral hind paw (64%).

Animal Model:	Male CD-1 mice[2]
Dosage:	0.5 and 1 mg/kg
Administration:	Intravenous injection; 0.5 and 1 mg/kg; once daily; 7 days
Result:	Reduced mechanical allodynia and thermal hyperalgesia at 3 and 7 days after nerve injury in a dose-dependent manner.

REFERENCES

[1]. Luciano De Petrocellis, et al. N-palmitoyl-vanillamide (palvanil) is a non-pungent analogue of capsaicin with stronger desensitizing capability against the TRPV1 receptor and anti-hyperalgesic activity. Pharmacol Res. 2011 Apr;63(4):294-9.

[2]. Livio Luongo, et al. Palvanil, a non-pungent capsaicin analogue, inhibits inflammatory and neuropathic pain with little effects on bronchopulmonary function and body temperature. Pharmacol Res. 2012 Sep;66(3):243-50.

Caution: Product has not been fully validated for medical applications. For research use only.

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