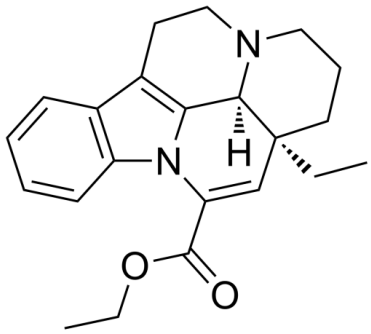
Data Sheet

Product Name:	Vinpocetine
Cat. No.:	CS-0545
CAS No.:	42971-09-5
Molecular Formula:	$C_{22}H_{26}N_2O_2$
Molecular Weight:	350.45
Target:	IKK; Phosphodiesterase (PDE); Sodium Channel
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease; NF-κB
Solubility:	DMSO : 6.25 mg/mL (ultrasonic);Ethanol : 14.29 mg/mL (ultrasonic)



BIOLOGICAL ACTIVITY:

Vinpocetine (Ethyl apovincaminate) is a derivative of the alkaloid Vincamine that blocks voltage-gated Na^+ channels. The **IC_{50}** value of Vinpocetine on direct **IKK** inhibition in the cell-free system is 17.17 μM. Vinpocetine is a **phosphodiesterase (PDE)** inhibitor and inhibits **NF-κB**-dependent inflammatory responses by directly targeting **IκB kinase complex (IKK)**, and has been widely used for the treatment of cerebrovascular disorders[1][2][3]. ***In Vitro:*** Vinpocetine (5-50 μM; 7 hours; VSMCs, HUVECs, A549 cells and RAW264.7 cells) potently inhibits TNF-α-induced NF-κB-dependent transcriptional activity in a dose-dependent manner with an approximate **IC_{50}** value of 25 μM. Vinpocetine do not have a significant effect on cell viability[1].

Vinpocetine (50 μM; 7 hours; VSMCs, HUVECs, A549 cells and RAW264.7 cells) potently inhibits TNF-α-induced up-regulation of TNF-α, IL-1β, IL-8, MCP-1, VCAM-1, ICAM-1and MIP-2 transcripts in several cell types[1]. ***In Vivo:*** Vinpocetine (2.5-10 mg/kg; intraperitoneal injection; C57BL/6 mice) potently inhibits TNF-α- or LPS-induced up-regulation of proinflammatory mediators, including TNF-α, IL-1β, and MIP-2, and decreases interstitial infiltration of polymorphonuclear leukocytes in a mouse model of TNF-α- or LPS-induced lung inflammation[1].

References:

[1]. Kye-Im Jeon et al. Vinpocetine inhibits NF-κB-dependent inflammation via an IKK-dependent but PDE-independent mechanism PNAS May 25, 2010 vol. 107 no. 21 9795-9800

[2]. Patyar S, et al. Role of vinpocetine in cerebrovascular diseases. Pharmacol Rep. 2011;63(3):618-28.

[3]. Alexandre E. Medina Vinpocetine as a potent antiinflammatory agent PNAS June 1, 2010, Vol. 107, No. 22 9921-9922.

CAIndexNames:

Eburnamenine-14-carboxylic acid, ethyl ester, (3α,16α)-

SMILES:

CCOC(C1=C[C@]2(CC)CCCN3CCC(C4=C(C=CC=C4)N51)=C5[C@]23[H])=O

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

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