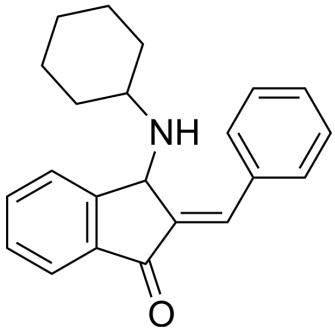
BCI



Cat. No.:	HY-115502
CAS No.:	1245792-51-1
Molecular Formula:	$C_{22}H_{23}NO$
Molecular Weight:	317
Target:	Phosphatase
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year

SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (394.32 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1546 mL	15.7729 mL	31.5457 mL
	5 mM	0.6309 mL	3.1546 mL	6.3091 mL
	10 mM	0.3155 mL	1.5773 mL	3.1546 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.08 mg/mL (6.56 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.56 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BCI ((E)-BCI) is a DUSP6 (dual specificity phosphatase 6) inhibitor. BCI shows anti-inflammatory activity and decreases reactive oxygen species (ROS) production. BCI can be used in inflammatory disease research[1][2].

In Vitro

BCI (100 ng/mL; 24 h) downregulats the expression of DUSP6 in RAW264.7 macrophage cells[2].
?BCI (0-1 nM; 24 h) inhibits the expression of IL-1β and IL-6 in lipopolysaccharide- (LPS-) activated macrophages[2].
?BCI (0-4 nM; 24 h) decreases ROS production and activates the Nrf2 Pathway in LPS-activated macrophages[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	RAW264.7 macrophage cells
Concentration:	100 ng/mL
Incubation Time:	24 hours
Result:	Showed DUSP6 protein downregulation.

RT-PCR[2]

Cell Line:	RAW264.7 macrophage cells
Concentration:	0-1 nM
Incubation Time:	24 hours
Result:	Inhibited the expression of IL-1β and IL-6 mRNA in LPS-activated macrophages.

CUSTOMER VALIDATION

- Phytother Res. 2023 Mar 3.
- Neural Regen Res. 2023.
- Cells. 2022 Feb 19;11(4):732.
- Cancers (Basel). 2023 Sep 6, 15(18), 4442.
- Development. 2023 Feb 13;dev.201090.

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REFERENCES

[1]. Zhang F, et al. DUSP6 Inhibitor (E/Z)-BCI Hydrochloride Attenuates Lipopolysaccharide-Induced Inflammatory Responses in Murine Macrophage Cells via Activating the Nrf2 Signaling Axis and Inhibiting the NF-κB Pathway. Inflammation. 2019 Apr;42(2):672-681.

[2]. Korotchenko VN, et al. In vivo structure-activity relationship studies support allosteric targeting of a dual specificity phosphatase. Chembiochem. 2014 Jul 7;15(10):1436-45.

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