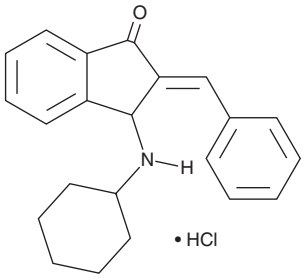
PRODUCT INFORMATION

BCI (hydrochloride)

Item No. 21945

CAS Registry No.:	95130-23-7
Formal Name:	3-(cyclohexylamino)-2,3-dihydro-2-(phenylmethylene)-1H-inden-1-one, monohydrochloride
MF:	$C_{22}H_{23}NO \bullet HCl$
FW:	353.9
Purity:	≥95% (mixture of isomers)
UV/Vis.:	λ_{max}: 312 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

BCI (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the BCI (hydrochloride) in the solvent of choice, which should be purged with an inert gas. BCI (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of BCI (hydrochloride) in these solvents is approximately 10 and 2 mg/ml, respectively.

BCI (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, BCI (hydrochloride) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. BCI (hydrochloride) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

BCI is an inhibitor of dual specificity phosphatase 6 (DUSP6) and DUSP1.[1,2] (E/Z)-BCI (0.5-2 µM) inhibits LPS-induced expression of *Dusp6* in a concentration-dependent manner and increases nuclear protein levels of Nrf2 in RAW 264.7 macrophages. It also inhibits LPS-induced increases in the production of IL-1β, IL-6, and reactive oxygen species (ROS) in RAW 264.7 and isolated mouse peritoneal macrophages in an ERK-independent manner. (E/Z)-BCI inhibits proliferation, migration, and invasion of gastric cancer cells in an ERK-dependent manner and induces cell death in part *via* the DNA damage response pathway.[2] It reduces tumor growth in a gastric cancer patient-derived xenograft (PDX) mouse model when administered at a dose of 35 mg/kg every seven days and has an additive effect when used in combination with CDDP (cisplatin; Item No. 13119). The (E) isomer of BCI inhibits DUSP6 and DUSP1 in HeLa cells (IC_{50}s = 12.3 and 11.5 µM, respectively, for the human recombinant enzymes) and prevents pERK2 dephosphorylation induced by DUSP6 *in vitro*.[3] It is selective for DUSP6 and DUSP1 over DUSP3/VHR, Cdc25B, and PTP1B, for which it has no activity. (E)-BCI induces expansion of the cardiac progenitor cell pool and increases heart size in zebrafish embryos. This product is a mixture of the (E) and (Z) isomers of BCI.[2]

Reference

1. Zhang, F., Tang, B., Zhang, Z., *et al. Inflammation* **42(2)**, 672-681 (2019).
2. Wu, Q.-N., Liao, Y.-F., Lu, Y.-X., *et al. Cancer Lett.* **412**, 243-255 (2018).
3. Molina, G., Vogt, A., Bakan, A., *et al. Nat. Chem. Biol.* **5(9)**, 680-687 (2009).

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