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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

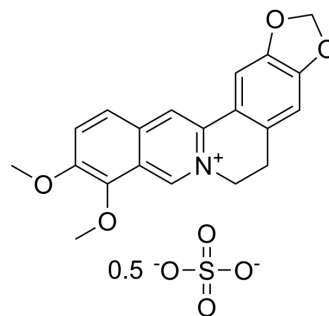
mail@szabo-scandic.com

www.szabo-scandic.com

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Berberine hemisulfate

Cat. No.:	HY-N0716A
CAS No.:	316-41-6
Molecular Formula:	C ₂₀ H ₁₈ NO ₄ ·1/2O ₄ S
Molecular Weight:	384.4
Target:	Topoisomerase; Autophagy; Bacterial; Reactive Oxygen Species; Antibiotic; Apoptosis; PI3K; Akt; Caspase; JNK; AP-1; NF-κB
Pathway:	Cell Cycle/DNA Damage; Autophagy; Anti-infection; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis; PI3K/Akt/mTOR; MAPK/ERK Pathway
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Berberine hemisulfate is the hemisulfate form of Berberine (HY-N0716). Berberine hemisulfate is an alkaloid isolated from the Chinese herbal medicine Huanglian. Berberine hemisulfate exhibits anti-inflammatory, antibiobic, antitumor, cardiovascular protective and neuroprotective activity ^{[1][2][3][4][5][6]} .
In Vitro	<p>Berberine hemisulfate exhibits antimicrobial activity through inhibition of cell division protein FtsZ, or through DNA/RNA binding and deal thus DNA/RNAdamege^[3].</p> <p>Berberine hemisulfate exhibits anti-inflammatory activity by inhibiting TNF-α and the activation of its downstream pathway AP-1 and NF-κB^[4].</p> <p>Berberine hemisulfate exhibits neuroprotective efficacy by inhibiting the reactive oxygen species (ROS) production and caspase activation, and activating the PI3K/Akt signaling pathway, and heme oxygenase-1 (HO-1) expression^[5].</p> <p>Berberine hemisulfate attenuates metabolic diseases through regulations of the lipids composition and inhibition of insulin resistance^[6].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Acta Pharmacol Sin. 2022 Aug 10.
- Int J Nanomedicine. 2023 Jul 31.
- JCI Insight. 2023 Jul 24;8(14):e166306.
- Phytomedicine. 2023 Dec 2, 155247.
- Biomed Pharmacother. 2023 Dec 18:170:116012.

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REFERENCES

[1]. Cai Y, et al. Berberine inhibits the growth of human colorectal adenocarcinoma in vitro and in vivo. J Nat Med. 2014 Jan;68(1):53-62.

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- [2]. Cui HX, et al. Preparation and Evaluation of Antidiabetic Agents of Berberine Organic Acid Salts for Enhancing the Bioavailability. *Molecules*. 2018 Dec 28;24(1):103.
- [3]. Boberek JM, et al., Genetic evidence for inhibition of bacterial division protein FtsZ by berberine. *PLoS One*. 2010 Oct 29;5(10):e13745.
- [4]. Remppis A, et al., Rhizoma Coptidis inhibits LPS-induced MCP-1/CCL2 production in murine macrophages via an AP-1 and NFkappaB-dependent pathway. *Mediators Inflamm*. 2010;2010:194896.
- [5]. Bae J, et al., Berberine protects 6-hydroxydopamine-induced human dopaminergic neuronal cell death through the induction of heme oxygenase-1. *Mol Cells*. 2013 Feb;35(2):151-7.
- [6]. Ye Y, et al., Efficacy and Safety of Berberine Alone for Several Metabolic Disorders: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. *Front Pharmacol*. 2021 Apr 26;12:653887.
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA