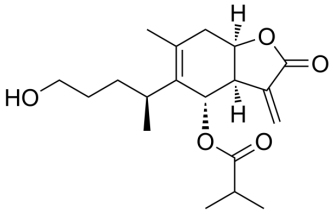
6-O-Isobutyrylbritannilactone

Cat. No.:	HY-N10802
CAS No.:	1259933-02-2
Molecular Formula:	$C_{19}H_{28}O_5$
Molecular Weight:	336.42
Target:	ERK; Akt; PI3K; Epigenetic Reader Domain
Pathway:	MAPK/ERK Pathway; Stem Cell/Wnt; PI3K/Akt/mTOR; Epigenetics
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

6-O-Isobutyrylbritannilactone is a natural melanogenesis inhibitor. 6-O-Isobutyrylbritannilactone, a sesquiterpene, can be isolated from the flowers of Inula britannica. 6-O-Isobutyrylbritannilactone inhibits IBMX (HY-12318)-induced melanin production in B16F10 cells. 6-O-Isobutyrylbritannilactone also regulates ERK, PI3K/AKT, and CREB, shows antimelanogenic activity in zebrafish embryos models[1].

In Vitro

6-O-Isobutyrylbritannilactone (5-100 μM; 48 h) shows cytotoxicity against B16F10 cells stimulated by IBMX (100 μM; 24 h)[1].
6-O-Isobutyrylbritannilactone (5-30 μM; 12 h) dose-dependently inhibits whitening-related mRNA levels in B16F10 cells stimulated by IBMX (100 μM; 48 h)[1].
6-O-Isobutyrylbritannilactone (20 μM; 1-9 h) time-dependently inhibits the phosphorylation of ERK, AKT, and CREB[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[1]

Cell Line:	B16F10 cells
Concentration:	5 μM, 10 μM, 20 μM, 30 μM
Incubation Time:	12 hours; with 100 μM IBMX for 48 hours
Result:	Inhibited whitening-related mRNA levels, and resulted in completely inhibited expressions of melanogenesis-related protein levels at 20 μM.

Western Blot Analysis[1]

Cell Line:	20 μM
Concentration:	5 μM, 10 μM, 20 μM, 30 μM
Incubation Time:	1 h, 3 h, 6 h, and 9 h
Result:	Inhibited the phosphorylation of ERK, AKT, and CREB. Demonstrated the melanogenesis suppression induced by IBMX via inaction of multiple signaling pathways.

Cell Cytotoxicity Assay[1]

Cell Line:	B16F10 cells

Concentration:	5 μM, 10 μM, 20 μM, 50 μM, and 100 μM
Incubation Time:	24 hours
Result:	Inhibited B16F10 cells viability in a dose-dependent manner.

In Vivo

6-O-Isobutyrylbritannilactone (10-100 μM; 48 h) significantly reduces pigmentation compared to the untreated controls in zebrafish embryos[1].

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

Animal Model:	Zebrafish embryos[1]
Dosage:	10 μM, 50 μM, and 100 μM
Administration:	Dipped in culture for 48 hours
Result:	Reduced pigmentation by approximately 8%, 13%, and 16%.

REFERENCES

[1]. Jang DK, et al. Anti-Melanogenesis Activity of 6-O-Isobutyrylbritannilactone from Inula britannica on B16F10 Melanocytes and In Vivo Zebrafish Models. Molecules. 2020 Aug 26;25(17):3887.

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