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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

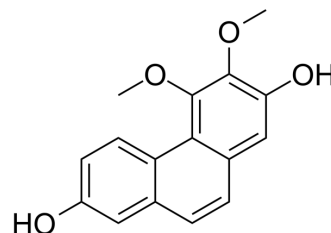
mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Nudol

Cat. No.:	HY-N7385
CAS No.:	86630-46-8
Molecular Formula:	C ₁₆ H ₁₄ O ₄
Molecular Weight:	270.28
Target:	MMP; Apoptosis
Pathway:	Metabolic Enzyme/Protease; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Nudol is a phenanthrene compound that has anti-cancer activity. Nudol inhibits cell proliferation, induces cell apoptosis. Nudol inhibits MMP-2 and MMP-9 activity (K _i : 988.9 nM, 1.76 μM, respectively). Nudol can be used in the research of cancers, such as osteosarcoma ^{[1][2]} .																	
IC₅₀ & Target	MMP-2 988.9 nM (K _i)	MMP-9 1.76 μM (K _i)																
In Vitro	<p>Nudol (0-40 μM, 24-72 h) decreases cell viability in several cancer cell lines^[1].</p> <p>Nudol (0-20 μM, 24/48 h) suppresses the cell migration and causes cell cycle arrest at G2/M phase in U2OS cells^[1].</p> <p>Nudol (20 μM, 48 h) induces cell apoptosis through the caspase-dependent pathway in U2OS cells^[1].</p> <p>Nudol (compound 4) inhibits MMP-2 and MMP-9 activity with K_i values of 988.9 nM and 1.76 μM respectively^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>U2OS, MG63, MDA-MB-231, MCF-7, and A549 cells</td> </tr> <tr> <td>Concentration:</td> <td>0, 10, 20, 30, 40 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24, 48, and 72 h</td> </tr> <tr> <td>Result:</td> <td>Decreased the cell viability of osteosarcoma cells in dose- and time-dependent manners.</td> </tr> </table> <p>Cell Cycle Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>U2OS cells</td> </tr> <tr> <td>Concentration:</td> <td>0, 5, 10, 20 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24, 48, and 72 h</td> </tr> <tr> <td>Result:</td> <td>Triggered G2/M phase arrest by decreasing cell cycle-related proteins (CDK1, CDK2, CDK4, and CDK10).</td> </tr> </table> <p>Western Blot Analysis^[1]</p>		Cell Line:	U2OS, MG63, MDA-MB-231, MCF-7, and A549 cells	Concentration:	0, 10, 20, 30, 40 μM	Incubation Time:	24, 48, and 72 h	Result:	Decreased the cell viability of osteosarcoma cells in dose- and time-dependent manners.	Cell Line:	U2OS cells	Concentration:	0, 5, 10, 20 μM	Incubation Time:	24, 48, and 72 h	Result:	Triggered G2/M phase arrest by decreasing cell cycle-related proteins (CDK1, CDK2, CDK4, and CDK10).
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Cell Line:	U2OS cells
Concentration:	0, 5, 10, 20, 40 μ M
Incubation Time:	24, 48, and 72 h
Result:	Increased the protein level of cytochrome c. Down-regulated anti-apoptotic Bcl-2, accompanied by an increased level of pro-apoptotic Bax.

REFERENCES

[1]. Yuying Zhang, et al. Nudol, a phenanthrene derivative from *Dendrobium nobile*, induces cell cycle arrest and apoptosis and inhibits migration in osteosarcoma cells. *Drug Des Devel Ther.* 2019 Jul 29;13:2591-2601.

[2]. Mohammad Al-Amin, et al. Inhibitory Effect of *Dioscorea bulbifera* Tubers on the Migration of Triple-Negative Breast Cancer Cells. *Breast Cancer Cells. Rev. Bras. Farmacogn.* 31, 335-341 (2021).

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