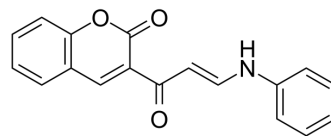


hCAIX/XII-IN-5

Cat. No.:	HY-150695
CAS No.:	2421127-99-1
Molecular Formula:	C ₁₈ H ₁₃ NO ₃
Molecular Weight:	291.3
Target:	Carbonic Anhydrase; Apoptosis
Pathway:	Metabolic Enzyme/Protease; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	hCAIX/XII-IN-5 (Coumarin 9a) a carbonic anhydrase (CA) inhibitor, and exhibits excellent hCA IX/XII selectivity (K _i =93.9 and 85.7 nM, respectively) over hCA I and hCA II. hCAIX/XII-IN-5 shows anti-proliferative activities to cancer cells. hCAIX/XII-IN-5 can delay cell cycle and induce apoptosis ^[1] .																	
IC₅₀ & Target	hCA XII 85.7 nM (K _i)	hCA IX 93.9 nM (K _i)																
In Vitro	<p>hCAIX/XII-IN-5 (2.36-32.17 μM) treatment shows both anti-proliferative activities to MCF-7 and PANC-1 cells under the normoxic and hypoxic condition^[1].</p> <p>hCAIX/XII-IN-5 (2.69 μM; 24 h) treatment shows accumulation of MCF-7 cells in the Sub-G₁ phase and cell arrest in G₂-M phase^[1].</p> <p>hCAIX/XII-IN-5 (2.69 μM; 24 h) treatment increases the percent of annexin V-FITC-positive apoptotic cells, including both the early and late apoptotic cells (UR+LR) ^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>MCF-7 and PANC-1 cells</td> </tr> <tr> <td>Concentration:</td> <td>2.36-32.17 μM</td> </tr> <tr> <td>Incubation Time:</td> <td></td> </tr> <tr> <td>Result:</td> <td>Exerted anti-proliferative activities to MCF-7 and PANC-1 cells (IC₅₀=2.69 μM and 32.17 μM, respectively) under the normoxic condition, and moderate activities against both MCF-7 and PANC-1 cells (IC₅₀=16.36 μM and 11.78 μM, respectively) under the hypoxic condition.</td> </tr> </table> <p>Cell Cycle Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>MCF-7 cells</td> </tr> <tr> <td>Concentration:</td> <td>2.69 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>Resulted in a significant increase in the percentage of cells at Sub-G₁ by 14-folds with</td> </tr> </table>		Cell Line:	MCF-7 and PANC-1 cells	Concentration:	2.36-32.17 μM	Incubation Time:		Result:	Exerted anti-proliferative activities to MCF-7 and PANC-1 cells (IC ₅₀ =2.69 μM and 32.17 μM, respectively) under the normoxic condition, and moderate activities against both MCF-7 and PANC-1 cells (IC ₅₀ =16.36 μM and 11.78 μM, respectively) under the hypoxic condition.	Cell Line:	MCF-7 cells	Concentration:	2.69 μM	Incubation Time:	24 hours	Result:	Resulted in a significant increase in the percentage of cells at Sub-G ₁ by 14-folds with
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	significant increase in cell percentage in the G ₁ -M phase by 2.3-folds compared to the control.
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Apoptosis Analysis^[1]

Cell Line:	MCF-7 cells
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Concentration:	2.69 μ M
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Incubation Time:	24 hours
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Result:	Resulted in a significant increase in the percent of annexin V-FITC-positive apoptotic cells, including both the early (from 0.61% to 6.77%) and late apoptotic (from 0.27% to 14.84%) cells (UR+LR), about 11- and 55-fold increase, respectively, as compared with the control.
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REFERENCES

[1]. Hany S Ibrahim Insights into the effect of elaborating coumarin-based aryl enaminones with sulfonamide or carboxylic acid functionality on carbonic anhydrase inhibitory potency and selectivity. Bioorg Chem. 2022 Sep;126:105888.

Caution: Product has not been fully validated for medical applications. For research use only.

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