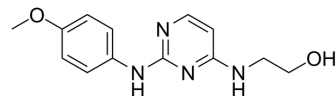


## Cardiogenol C

Cat. No.:	HY-12319
CAS No.:	671225-39-1
Molecular Formula:	C <sub>13</sub> H <sub>16</sub> N <sub>4</sub> O <sub>2</sub>
Molecular Weight:	260.29
Target:	β-catenin; Wnt
Pathway:	Stem Cell/Wnt
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Cardiogenol C is a potent cell-permeable pyrimidine inducer which prompts the differentiation of ESCs into cardiomyocytes (EC <sub>50</sub> =100 nM) <sup>[1]</sup> . Cardiogenol C also acts cardiomyogenic on already lineage-committed progenitor cell types with a limited degree of plasticity. Cardiogenol C is a useful cardiomyogenic agent and can be used as a tool to improve cardiac repair by cell transplantation therapy in animal models <sup>[2]</sup> .														
<b>IC<sub>50</sub> &amp; Target</b>	EC <sub>50</sub> : 100 nM (differentiation of ESCs into cardiomyocytes) <sup>[1]</sup>														
<b>In Vitro</b>	<p>Cardiogenol C (1 μM; 7 days) has a cardiomyogenic effect on P19 cells, it significantly increases atrial natriuretic factor (ANF, npa) in P19 cells when it compares to untreated control cells<sup>[1]</sup>.</p> <p>Cardiogenol C (0.01-100 μM; 7 days) significantly increases ANF expression. In addition, another frequently used cardiac marker gene (NKX2-5) is also significantly increased by this small molecule in C2C12 cells<sup>[2]</sup>.</p> <p>Cardiogenol C (0.001-100 μM; 7 days) increases cardiac Nav1.5 sodium channel protein expression as dose-dependent manner in C2C12 cells<sup>[2]</sup>.</p> <p>Cardiogenol C (0.01-100 μM; 7 days) does not effect cell growth even at 10 μM. In addition, Cardiogenol C either solves in water or DMSO generates a similar effect. The highest concentration, 100 μM has significant cellular toxicity on C2C12 cells<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>RT-PCR<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>C2C12 cells</td> </tr> <tr> <td>Concentration:</td> <td>0.01 μM; 0.1 μM; 1 μM; 3 μM; 10 μM; 30 μM; 100 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>7 days</td> </tr> <tr> <td>Result:</td> <td>Increases ANF and NKX2.5 mRNA level as a dose-dependent manner.</td> </tr> </table> <p>Western Blot Analysis<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>C2C12 cells</td> </tr> <tr> <td>Concentration:</td> <td>0.001 μM; 0.01 μM; 0.1 μM; 1 μM; 10 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>7 days</td> </tr> </table>	Cell Line:	C2C12 cells	Concentration:	0.01 μM; 0.1 μM; 1 μM; 3 μM; 10 μM; 30 μM; 100 μM	Incubation Time:	7 days	Result:	Increases ANF and NKX2.5 mRNA level as a dose-dependent manner.	Cell Line:	C2C12 cells	Concentration:	0.001 μM; 0.01 μM; 0.1 μM; 1 μM; 10 μM	Incubation Time:	7 days
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Result:	Increased cardiac Nav1.5 sodium channel protein levels.
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Cell Proliferation Assay<sup>[2]</sup>

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Cell Line:	C2C12 cells
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Concentration:	0.01 $\mu$ M; 0.1 $\mu$ M; 1 $\mu$ M
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Incubation Time:	7 days
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Result:	Did not exert toxic effects on C2C12 cells at 0.01-10 $\mu$ M treatment.
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## REFERENCES

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[1]. Wu X, et al. Small molecules that induce cardiomyogenesis in embryonic stem cells. *J Am Chem Soc.* 2004 Feb 18;126(6):1590-1.

[2]. Mike AK, et al. Small molecule cardiogenol C upregulates cardiac markers and induces cardiac functional properties in lineage-committed progenitor cells. *Cell Physiol Biochem.* 2014;33(1):205-21.

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

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