# Hygrolidin

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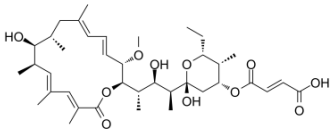
| **Cat. No.:** | HY-133537 |
| **CAS No.:** | 83329-73-1 |
| **Molecular Formula:** | $C_{38}H_{58}O_{11}$ |
| **Molecular Weight:** | 690.86 |
| **Target:** | Antibiotic; Fungal; ADC Cytotoxin |
| **Pathway:** | Anti-infection; Antibody-drug Conjugate/ADC Related |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

**Description**

Hygrolidin is a 16-membered macrolide antibiotic produced by Streptomyces hygroscopicus D-1166. Hygrolidin has anti-fungus activity against Valsa ceratosperma. Hygrolidin induces p21 expression and abrogates cell cycle progression at G1 and S phases. Hygrolidin has antitumor activity[1][2][3].

**In Vitro**

Hygrolidin (0.1, 1 μg/ml; for 24 h) increases both G1 and S phase populations and decreases M phase population[1].
Hygrolidin (0.1, 1, 10 μg/ml; for 24 h) decreases the amounts of cdk4, cyclin D, cyclin B and increases the amounts of cyclin E and p21. Hygrolidin-induced p21 preferentially associates with cyclin A-cdk2 complex and inhibits it[1].
Hygrolidin (0.1, 1 μg/ml; for 24 h) selectively induces p21 in DLD-1 cells at mRNA level, but not in WI-38 fibroblasts[1].
Hygrolidin, for 3 days, inhibits growth of various cell lines including DLD-1 colon cancer, LNCaP prostate cancer, K562 leukemia cells, LNCaP prostate cancer, EL-4 lymphoma ($IC_{50}$s = 1.0-33 ng/ml, respectively)[1].
Hygrolidin shows growth inhibition on Trypanosoma cruzi ($IC_{50}$=1.1 nM), Trypanosoma brucei brucei ($IC_{50}$=77 nM), and Leishmania donovani ($IC_{50}$=72.5 nM)[3].

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

Cell Cycle Analysis[1]

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| Cell Line: | DLD-1 cells |
| Concentration: | 0.1, 1 μg/ml |
| Incubation Time: | For 24 hours |
| Result: | Increased both G1 and S phase populations and decreased M phase population. |

Western Blot Analysis[1]

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| Cell Line: | DLD-1 cells |
| Concentration: | 0.1, 1, 10 μg/ml |
| Incubation Time: | For 24 hours |
| Result: | Decreased the amounts of cdk4, cyclin D, cyclin B and increased the amounts of cyclin E and p21. |

RT-PCR[1]

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| Cell Line: | DLD-1 or WI-38 cells |
| Concentration: | 0.1, 1 μg/ml |
| Incubation Time: | For 24 hours |
| Result: | Selectively induced p21 in DLD-1 cells at mRNA level, but not in WI-38 fibroblasts. |

## REFERENCES


[1]. Manabu Kawada, et al. Hygrolidin induces p21 expression and abrogates cell cycle progression at G1 and S phases. Biochem Biophys Res Commun. 2002 Oct 18;298(1):178-83.

[2]. H Seto, et al. The isolation and structures of hygrolidin amide and defumarylhygrolidin. J Antibiot (Tokyo). 1984 May;37(5):610-3.

[3]. F Annang, et al. High-throughput screening platform for natural product-based drug discovery against 3 neglected tropical diseases: human African trypanosomiasis, leishmaniasis, and Chagas disease. J Biomol Screen. 2015 Jan;20(1):82-91.





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