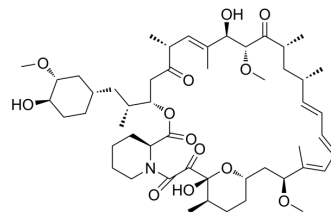


Rapamycin (GMP)

Cat. No.:	HY-10219G
CAS No.:	53123-88-9
Molecular Formula:	C ₅₁ H ₇₉ NO ₁₃
Molecular Weight:	914
Target:	mTOR
Pathway:	PI3K/Akt/mTOR
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Rapamycin (Sirolimus) (GMP) is Rapamycin (HY-10219) produced by using GMP guidelines. GMP small molecules works appropriately as an auxiliary reagent for cell therapy manufacture. Rapamycin is a potent and specific mTOR inhibitor ^{[1][2][3]} .
In Vitro	<p>Rapamycin (GMP) (1 nM; 2-3 weeks) induces in vitro differentiation of human embryonic stem cell (hESCs) into mineralized osteoblasts^[1].</p> <p>Rapamycin (GMP) (1 nM; 2-3 weeks) enhances the osteoblastic differentiation of human embryoid bodies (hEBs)^[1].</p> <p>Rapamycin (GMP) (20 nM; 4 h) serum-dependently promotes vascular smooth muscle cells (VSMCs) differentiation^[2].</p> <p>Rapamycin (GMP) induces osteoblastic differentiation in rat osteoblast-like osteosarcoma cells^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Nature. 2021 Jun;594(7862):271-276.
- Nature. 2018 Jun;558(7711):540-546.
- Nature. 2016 Dec 1;540(7631):119-123.
- Cell. 2023 Jun 22;186(13):2802-2822.e22.
- Cancer Cell. 2021 Mar 8;39(3):380-393.e8.

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REFERENCES

[1]. Lee KW, et al. Rapamycin promotes the osteoblastic differentiation of human embryonic stem cells by blocking the mTOR pathway and stimulating the BMP/Smad pathway. *Stem Cells Dev.* 2010 Apr;19(4):557-68.

[2]. Martin KA, et al. Rapamycin promotes vascular smooth muscle cell differentiation through insulin receptor substrate-1/phosphatidylinositol 3-kinase/Akt2 feedback signaling. *J Biol Chem.* 2007 Dec 7;282(49):36112-20.

[3]. Ogawa T, et al. Osteoblastic differentiation is enhanced by rapamycin in rat osteoblast-like osteosarcoma (ROS 17/2.8) cells. Biochem Biophys Res Commun. 1998 Aug 10;249(1):226-30.

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

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