

Product Data Sheet

Product Name: MeTC7
Cat. No.: GC52325

Chemical Properties

Cas. No. 1817841-22-7

SMILES C[C@@]12[C@](C=C[C@@]34C2CC[C@@]5(C)[C@@]3([H])CC[C@]5([H])[C@@H](CCCC(C)C)(N6C(N(C)C(N64)=O)=O)C[C@@H](OC(CBr)=O)CC1

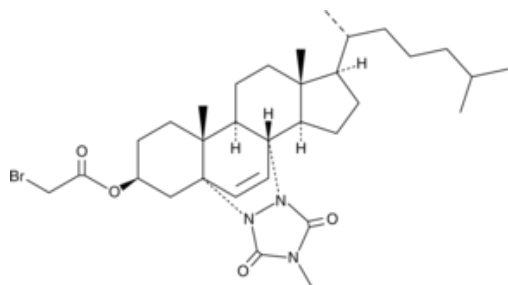
Formula $C_{32}H_{48}BrN_3O_4$ M.Wt 618.7

Solubility Ethanol: 1 mg/ml Storage -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines	C2C12 myotubes (murine myoblast cell line)
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Caution: Product has not been fully validated for medical applications. For research use only.

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Preparation Method	C2C12 cells were differentiated into myotubes in DMEM with 2% horse serum for 5 days. Differentiated C2C12 myotubes were pretreated with 10 μ M MeTC7 for 30 minutes before electric pulse stimulation (EPS) at 1Hz, 2ms, 11.5V for 24 hours. After EPS, cells were collected for mRNA expression analysis of IL-6, myostatin, and C/EBP δ by qRT-PCR, and for p-STAT3 and total STAT3 protein level measurement by Western blot.
Reaction Conditions	10 μ M; 30min pretreatment + 24h EPS
Applications	MeTC7 increased IL-6 mRNA expression compared with EPS alone. MeTC7 increased p-STAT3/STAT3 ratio. MeTC7 increased myostatin and C/EBP δ mRNA expression.
Animal experiment [2]:	
Animal models	Male non-obese diabetic (NOD) mice with experimental autoimmune prostatitis (EAP) fed 20% glucose water
Preparation Method	Mice were intraperitoneally administered MeTC7 10mg/kg three times weekly for 4 weeks after the first immunization. Prostate tissue, spleen lymphocytes, and serum were collected at sacrifice for histological scoring, flow cytometry, ELISA, RT-qPCR and immunohistochemistry.
Dosage form	10mg/kg; i.p.; three times weekly for 4 weeks
Applications	MeTC7 increased the proportion of spleen Th17 cells and CD4 ⁺ ROR γ t ⁺ cells. MeTC7 elevated serum IL-17A and IL-22 levels. MeTC7 upregulated prostate ROR γ t mRNA expression. MeTC7 promoted prostate inflammatory cell infiltration. MeTC7 reduced prostate VDR and p-ERK1/2 expression.

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References:

- [1] Hashimoto S, Hosoi T, Yakabe M, et al. Exercise-induced vitamin D receptor and androgen receptor mediate inhibition of IL-6 and STAT3 in muscle. *Biochem Biophys Res Commun.* 2024 Mar;37:101621.
- [2] Niu D, Yue SY, Wang X, et al. A high-glucose diet aggravates experimental autoimmune prostatitis via DHVD3/VDR/ERK axis-mediated Th17 differentiation. *Asian J Androl.* 2026;28:1-11.

Background

MeTC7 is a vitamin D receptor (VDR) antagonist ($IC_{50}=2.9\mu M$). MeTC7 blocks VDR/RXR α , VDR/MYCN and VDR/PD-L1 signaling. MeTC7 inhibits tumor cell viability, colony formation and PD-L1 expression. MeTC7 can be used in research on neuroblastoma, ovarian cancer, acute myeloid leukemia and other tumors, as well as tumor immunotherapy^[1-4].

In vitro, treatment with 100-500nM MeTC7 for 48 hours reduced PD-L1 protein level, reduced cell viability, and reduced colony number and size in AML-1, MV-411 and THP-1 cells^[5]. Treatment with 100-500nM MeTC7 for 48 hours reduced PD-L1 surface expression and reduced cell viability in PANC-1 cells, KCKO cells and ES2 cells^[6]. Pretreatment with 10 μM MeTC7 for 30 minutes followed by electric pulse stimulation for 24 hours increased IL-6 mRNA expression, increased p-STAT3/STAT3 ratio, and increased myostatin and C/EBP δ mRNA expression in C2C12 cells^[7].

In vivo, intraperitoneal injection of 10mg/kg MeTC7 for 7 days slowed tumor growth in NSG mice subcutaneously inoculated with ES2, SKOV-3 or D283 cells^[8]. Intraperitoneal injection of 10mg/kg MeTC7 three times weekly for 4 weeks increased the proportion of spleen Th17 cells and CD4⁺ROR γ ⁺ cells, elevated serum IL-17A and IL-22 levels, upregulated prostate ROR γ mRNA expression, promoted prostate inflammatory cell infiltration, and reduced prostate VDR and p-ERK1/2 expression in NOD mouse experimental autoimmune prostatitis model^[9].

References:

- [1] Liang L, Ruan Y, Yu X, et al. DKS26 Alleviates Ischemia-Reperfusion Injury-Induced Acute Kidney

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Injury by Stabilizing Vitamin D Receptors to Inhibit the Inflammatory Pathway of NF- κ B P65. Int J Mol Sci. 2025 Mar 25;26(7):2985.

[2] Lee TW, Lee TI, Higa S, et al. Calcitriol deficiency reduces myocardial ATP production with disturbed mitochondrial dynamics and increased uncoupling protein 2 expression. Eur J Pharmacol. 2025 Sep 5;1002:177858.

[3] Dong L, Gao Y, Li Q, et al. Betulinic Acid Enema Alleviates Colitis by Targeting Vitamin D Receptor to Protect the Intestinal Mucosal Barrier and Modulate Mucosa-Associated Microbiota. Phytother Res. 2026 Jun 18.

[4] Isaac I, Patel L, Tran N, et al. Reengineering Endogenous Targeting Lipid Nanoparticles (ENDO) for Systemic Delivery of mRNA to Pancreas. Adv Mater. 2025 Oct;37(40):e2507657.

[5] Khazan N, Quarato ER, Singh NA, et al. Vitamin D Receptor Antagonist MeTC7 Inhibits PD-L1. Cancers. 2023 Jun 30;15(13):3432.

[6] Singh RK, Kim K, Rowswell-Turner RB, et al. Targeting Vitamin-D receptor(VDR) by a small molecule antagonist MeTC7 inhibits PD-L1 but controls TH-MYCN neuroblastoma growth PD-L1 independently. bioRxiv. 2020 Aug 17:2020.08.16.252940.

[7] Hashimoto S, Hosoi T, Yakabe M, et al. Exercise-induced vitamin D receptor and androgen receptor mediate inhibition of IL-6 and STAT3 in muscle. Biochem Biophys Rep. 2024;37:101621.

[8] Khazan N, Kim KK, Hansen JN, et al. Identification of a Vitamin-D Receptor Antagonist, MeTC7, which Inhibits the Growth of Xenograft and Transgenic Tumors In Vivo. J Med Chem. 2022 Apr 28;65(8):6039-55.

[9] Niu D, Yue SY, Wang X, et al. A high-glucose diet aggravates experimental autoimmune prostatitis via DHVD3/VDR/ERK axis-mediated Th17 differentiation. Asian J Androl. 2026;28:1-11.

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