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- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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## Lieferung & Zahlungsart

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## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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# GYY4137 (GMP)

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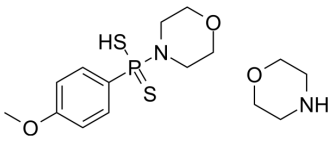
| **Cat. No.:** | HY-107632G |
| **CAS No.:** | 106740-09-4 |
| **Molecular Formula:** | $C_{15}H_{25}N_2O_3PS_2$ |
| **Molecular Weight:** | 376.47 |
| **Target:** | Apoptosis; STAT; NF-κB; TNF Receptor; NO Synthase; Interleukin Related; COX |
| **Pathway:** | Apoptosis; JAK/STAT Signaling; Stem Cell/Wnt; NF-κB; Immunology/Inflammation |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |




## BIOLOGICAL ACTIVITY

**Description**

GYY4137 (GMP) is the GMP-grade version of GYY4137 (HY-107632). Small molecules of GMP grade can be used as adjuvant reagents in cell therapy. GYY4137 (GMP) is a sustained-release H2S donor possessing vasodilatory, antihypertensive, and anti-inflammatory activities. GYY4137 (GMP) can inhibit cell growth, induce apoptosis, and cause cell cycle arrest by blocking the STAT3 pathway, demonstrating potent anticancer activity[1][2][3][4][5][6].

**$IC_{50}$ & Target**

Stat-3

**In Vitro**

GYY4137 (GMP) (400-800 μM) causes concentration-dependent killing of seven different human cancer cell lines (HeLa, HCT-116, Hep G2, HL-60, MCF-7, MV4-11 and U2OS) but did not affect survival of normal human lung fibroblasts (IMR90, WI-38)[2].
GYY4137 (GMP) (0.1-0.5 mM) decreases LPS-induced production of nitrite ($NO_2^-$), PGE2, TNF-α and IL-6 from human synoviocytes (HFLS) and articular chondrocytes (HAC), reduces the levels and catalytic activity of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) and reduced LPS-induced NF-κB activation[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

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| Cell Line: | HeLa, HCT-116, Hep G2, HL-60, MCF-7, MV4-11 and U2OS |
| Concentration: | 400 or 800 μM |
| Incubation Time: | 5 days |
| Result: | Significantly affected cancer cell survivability. |

**In Vivo**

GYY4137 (GMP) (100-300 mg/kg; i.p.; daily for 14 days) significantly reduces the tumor volume in both animal models, in a dose-dependent manner[2].
In the complete Freund's adjuvant (CFA)-treated mouse, GYY4137 (GMP) (50 mg/kg, i.p.) injected 1 hr prior to CFA increased knee joint swelling while an anti-inflammatory effect, as demonstrated by reduced synovial fluid myeloperoxidase (MPO) and N-acetyl-β-D-glucosaminidase (NAG) activity and decreased TNF-α, IL-1β, IL-6 and IL-8 concentration, was apparent when GYY4137 (GMP) was injected 6 hrs after CFA[3].
GYY4137 (GMP) significantly inhibited tumor growth in the subcutaneous HepG2 xenograft model by inhibiting STAT3 activation and its target gene expression[4].
GYY4137 (GMP) prevents nitrative stress and α-synuclein nitration in an MPTP mouse model of parkinson's disease[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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| Animal Model: | Female, severe combined immunodeficiency (SCID) mice (bearing HL-60 or MV4-11 cells)[2] |
| Dosage: | 100, 200 and 300 mg/kg |
| Administration: | i.p.; daily for 14 days |
| Result: | Reduced tumor volume by 52.5% and 55.3% in HL-60 and MV4–11 injected animals. |

## CUSTOMER VALIDATION

- Cell Commun Signal. 2024 Jan 12;22(1):33.
- Antioxid Redox Signal. 2024 Jun 15.
- Molecules. 2023 Jun 14, 28(12), 4770.
- Nitric Oxide. 8 October 2022.

See more customer validations on www.MedChemExpress.com

## REFERENCES


[1]. Li L, et al. Characterization of a novel, water-soluble hydrogen sulfide-releasing molecule (GYY4137): new insights into the biology of hydrogen sulfide. Circulation. 2008;117(18):2351-2360.

[2]. Lee ZW, et al. The slow-releasing hydrogen sulfide donor, GYY4137, exhibits novel anti-cancer effects in vitro and in vivo. PLoS One. 2011;6(6):e21077.

[3]. Li L, et al. The complex effects of the slow-releasing hydrogen sulfide donor GYY4137 in a model of acute joint inflammation and in human cartilage cells. J Cell Mol Med. 2013;17(3):365-376.

[4]. Lu S, Gao Y, et al. GYY4137, a hydrogen sulfide ($H_2S$) donor, shows potent anti-hepatocellular carcinoma activity through blocking the STAT3 pathway. Int J Oncol. 2014;44(4):1259-1267.

[5]. Hou X, et al. GYY4137, an H2S Slow-Releasing Donor, Prevents Nitrative Stress and α-Synuclein Nitration in an MPTP Mouse Model of Parkinson's Disease. Front Pharmacol. 2017;8:741. Published 2017 Oct 30.

[6]. Lu S, et al. GYY4137, a hydrogen sulfide (H2S) donor, shows potent anti-hepatocellular carcinoma activity through blocking the STAT3 pathway[J]. International journal of oncology, 2014, 44(4): 1259-1267.





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