产品名称：**GW2580**
产品别名：**GW2580**

## 生物活性：

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| **Description** | GW2580 is an orally bioavailable and selective inhibitor of c-Fms kinase which completely inhibits human cFMS kinase in vitro at 0.06 μM. GW2580 acts as a competitive inhibitor of ATP binding to the cFMS kinase and inhibits colony-stimulating-factor-1 signaling[1]. |
| **$IC_{50}$ & Target** | IC50: 60 nM (c-FMS) |
| **In Vitro** | GW2580 completely inhibits the growth of CSF-1-dependent mouse myeloid M-NFS-60 cells at 0.7 μM. GW2580 at 0.8-1 μM completely blocks the ability of CSF-1 to induce the growth of mouse M-NFS60 myeloid cells and human monocytes[1].<br>GW2580 causes a 30-40% inhibition of PTH-induced calcium release at 0.1-0.3 μM, with higher concentrations of 1, 3, and 10 μM completely inhibiting the PTH response[1].<br>GW2580 inhibits CSF1R phosphorylation in RAW264.7 murine macrophages stimulated with 10 ng/mL with IC50 of approximately 10 nM[2].<br>GW2580 also inhibits TRKA activity with IC50 of 0.88 μM[3]. |
| **In Vivo** | GW2580 (Oral administration; 20 and 80 mg/kg) produces a dose-related decrease in the number of tumor cells, with the 80 mg/kg dose completely blocking tumor growth[1].<br>GW2580 (Oral administration; 20 and 80 mg/kg) has gave maximal plasma concentrations of 1.4 and 5.6 μM, respectively[1].<br>GW2580 (50 mg/kg; twice a day from days 0 to 21, 7 to 21, or 14 to 21) inhibits joint connective tissue and bone destruction in a 21-day adjuvant arthritis model[3]. |

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| **Animal Model:** | Female C3H/HEN mice or female CD-1 nude mice weighing 22-26 g[1] |
| **Dosage:** | 20 and 80 mg/kg |
| **Administration:** | Oral administration |
| **Result:** | Produced a dose-related decrease in the number of tumor cells, with the 80 mg/kg dose completely blocking tumor growth. |

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| **Animal Model:** | Female C3H/HEN mice or female CD-1 nude mice weighing 22-26 g[1] |
| **Dosage:** | 20 and 80 mg/kg (Pharmacokinetic Study) |
| **Administration:** | Oral administration |
| **Result:** | Had gave maximal plasma concentrations of 1.4 and 5.6 μM, respectively. |

***In Vitro:***

**DMSO : 17.5 mg/mL (47.76 mM;** Need ultrasonic and warming)

| **Preparing Stock Solutions** | Solvent / Mass / Concentration | **1 mg** | **5 mg** | **10 mg** |
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| | 1 mM | 2.7292 mL | 13.6459 mL | 27.2918 mL |
| | 5 mM | 0.5458 mL | 2.7292 mL | 5.4584 mL |
| | 10 mM | 0.2729 mL | 1.3646 mL | 2.7292 mL |

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

***In Vivo:***

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| **Solvent&Solubility** | 请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 **In Vitro** 方式配制澄清的储备液，再依次添加助溶剂：<br>——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶<br>1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline<br>Solubility: ≥ 2.5 mg/mL (6.82 mM); Clear solution<br>此方案可获得 ≥ 2.5 mg/mL (6.82 mM，饱和度未知) 的澄清溶液。<br>以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。 |
| **References** | [1]. Conway JG, et al. Inhibition of colony-stimulating-factor-1 signaling in vivo with the orally bioavailable cFMS kinase inhibitor GW2580. Proc Natl Acad Sci U S A. 2005 Nov 1;102(44):16078-83.<br>[2]. Priceman SJ, et al. Targeting distinct tumor-infiltrating myeloid cells by inhibiting CSF-1 receptor: combating tumor evasion of antiangiogenic therapy. Blood. 2010 Feb 18;115(7):1461-71<br>[3]. Conway JG, et al. Effects of the cFMS kinase inhibitor 5-(3-methoxy-4-((4-methoxybenzyl)oxy)benzyl)pyrimidine-2,4-diamine (GW2580) in normal and arthritic rats. J Pharmacol Exp Ther. 2008 Jul;326(1):41-50. |