

Store at  
-20°C  
#79508**AM-580**

5 mg



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## Background

The synthetic retinoic acid analog AM-580 displays high selectivity for nuclear retinoic acid receptors (RAR), binding RAR $\alpha$  more potently ( $EC_{50}$  = 0.3 nM) than either RAR $\beta$  ( $EC_{50}$  = 8.6 nM) or RAR $\gamma$  ( $EC_{50}$  = 13 nM) (1,2). Signaling pathways controlled by retinoic acid coordinate cell proliferation, differentiation, apoptosis, and development of many organs and tissues (3). Treatment of a mouse model of Alzheimer's Disease (AD) with the retinoid receptor agonist AM-580 produced an anti-inflammatory effect and regulated the neurotoxic activation of microglia, shifting microglial activity toward a neuroprotective phenotype (4). AM-580 also interrupts the life cycle of diverse viruses by inhibiting host lipid biosynthesis through interaction with sterol regulatory element binding protein (SREBP), which binds sterol response elements in the promoter/enhancer regions of multiple lipogenic genes (5). In a screen of multiple antiviral agents, AM-580 exhibited anti-SARS-CoV-2 activity, with AM-580 treatment producing a substantial reduction in viral load (6).

## Molecular Formula

$C_{22}H_{25}NO_{33}$

## Molecular Weight

351.4 g/mol

## Purity

>98%

## CAS

102121-60-8

## Solubility

Soluble in DMSO at 35 mg/mL or ethanol at 18 mg/mL.

## Storage

Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

## Directions for Use

AM-580 is supplied as a lyophilized powder. For a 15 mM stock, reconstitute 5 mg of powder in 0.95 mL of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

## Background References

1. Martin, B. et al. (1992) *Skin Pharmacol* 5, 57-65.
2. Charton, J. et al. (2009) *Bioorg Med Chem Lett* 19, 489-92.
3. Ghyselinck, N.B. and Duester, G. (2019) *Development* 146, dev167502. doi: 10.1242/dev.167502.
4. Ganz, T. et al. (2022) *J Neuroinflammation* 19, 5.
5. Yuan, S. et al. (2019) *Nat Commun* 10, 120.
6. Yuan, S. et al. (2020) *Viruses* 12, 628. doi: 10.3390/v12060628.

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