

Store at RT

Amlexanox

100 mg

#98190


Cell Signaling
 TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.**Background**

Amlexanox is an anti-allergic and anti-inflammatory drug that was once commonly used to treat recurrent aphthous ulcers (canker sores). It has also been effective in treating asthma, hay fever, and conjunctivitis, possibly through reducing the release of histamine and leukotriene from leukocytes and mast cells (1). Amlexanox binds (IC_{50} of approximately 1-2 μ M) and inhibits the non-canonical I κ B kinases IKK- ϵ and TANK-binding kinase 1 (TBK1), inhibiting inflammation. Studies in obese mice treated with Amlexanox show that mice develop increased thermogenesis, producing increased insulin sensitivity and weight loss. These findings suggest a potential role for Amlexanox in the treatment of diabetes, obesity, and related disorders (2). Further, Amlexanox has demonstrated anti-cancer properties in numerous mouse models and appears to bind to at least 12 different enzyme and non-enzyme proteins (3). Binding of Amlexanox to the molecular chaperone HSP90 inhibits C-terminal chaperone activity and disrupts the multichaperone complex (4), while interaction with the calcium-binding proteins S100A12 and S100A13 is associated with an inhibition of FGF1 release and reduced cell migration and proliferation (5).

Molecular Formula $C_{16}H_{14}N_2O_4$ **Molecular Weight**

298.3 g/mol

Purity

>98%

CAS

68302-57-8

Solubility

Soluble in DMSO at 60 mg/mL.

Storage

Store lyophilized at room temperature, 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

Amlexanox is supplied as a lyophilized powder. For a 15 mM stock, reconstitute 5 mg of powder in 1.12 mL of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

Background References

1. Han, Y. et al. (2020) *Biochim Biophys Acta Mol Cell Res* 1867, 118766.
2. Reilly, S.M. et al. (2013) *Nat Med* 19, 313-21.
3. Bailly, C. (2022) *Biochem Pharmacol* 197, 114895.
4. Okada, M. et al. (2003) *Biochem J* 374, 433-41.
5. Landriscina, M. et al. (2000) *J Biol Chem* 275, 32753-62.

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