

Revision 1

Store at RT

#98190

Amlexanox

100 mg



Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
www.cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

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

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

APPLICATIONS KEY

CROSS-REACTIVITY KEY H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr:

hsp90, Rab, rabbit All: all species expected

<https://www.cellsignal.com/datasheet.jsp?productId=98190&images=0&protocol=0>

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc. All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](https://www.cellsignal.com/trademarks) for more information.

#98190

Amlexanox

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.

CSTLT_86_20200512

Orders: 877-616-CELL (2355) • orders@cellsignal.com • Support: 877-678-TECH (8324) • info@cellsignal.com • Web: www.cellsignal.com