

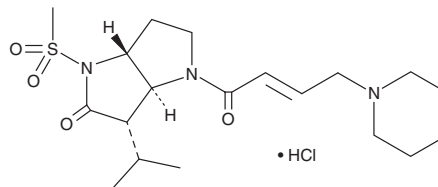
# PRODUCT INFORMATION



## GW 311616A

Item No. 27957

**CAS Registry No.:** 197890-44-1  
**Formal Name:** (3S,3aS,6aR)-hexahydro-3-(1-methylethyl)-1-(methylsulfonyl)-4-[(2E)-1-oxo-4-(1-piperidinyl)-2-buten-1-yl]-pyrrolo[3,2-b]pyrrol-2(1H)-one, monohydrochloride  
**MF:** C<sub>19</sub>H<sub>31</sub>N<sub>3</sub>O<sub>4</sub>S • HCl  
**FW:** 434.0  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

GW 311616A is supplied as a crystalline solid. A stock solution may be made by dissolving the GW 311616A in the solvent of choice, which should be purged with an inert gas. GW 311616A is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of GW 311616A in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

GW 311616A is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, GW 311616A should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. GW 311616A has a solubility of approximately 0.25 mg/ml in a 1:4 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

GW 311616A is an inhibitor of neutrophil elastase (IC<sub>50</sub> = 100 nM).<sup>1</sup> It is selective for neutrophil elastase (IC<sub>50</sub> = 22 nM for the human enzyme) over trypsin, cathepsin G, and plasmin (IC<sub>50</sub>s = >100 μM for all), as well as chymotrypsin and tissue plasminogen activator (IC<sub>50</sub>s = >3 μM for both), in cell-free assays. GW 311616A (20 μM) inhibits the formation of neutrophil extracellular traps (NETs) induced by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) in isolated human neutrophils.<sup>2</sup> It inhibits intraneutrophil elastase activity in isolated dog blood six hours after administration of a 0.22 mg/kg dose.<sup>3</sup> GW 311616A also inhibits neutrophil elastase in the liver in a mouse model of liver ischemia-reperfusion injury when administered at a dose of 2 mg/kg.<sup>4</sup>

### References

1. Benedek, B., Kopp, B., and Melzig, M.F. *Achillea millefolium* L. s.l. – is the anti-inflammatory activity mediated by protease inhibition? *J. Ethnopharmacol.* **113**(2), 312-317 (2007).
2. Nakabo, S., Ohmura, K., Akizuki, S., et al. Activated neutrophil carbamylates albumin via the release of myeloperoxidase and reactive oxygen species regardless of NETosis. *Mod. Rheumatol.* **30**(2), 345-349 (2019).
3. Macdonald, S.J.F., Dowle, M.D., Harrison, L.A., et al. The discovery of a potent, intracellular, orally bioavailable, long duration inhibitor of human neutrophil elastase—GW311616A a development candidate. *Bioorg. Med. Chem. Lett.* **11**(7), 895-898 (2001).
4. Uchida, Y., Freitas, M.C., Zhao, D., et al. The inhibition of neutrophil elastase ameliorates mouse liver damage due to ischemia and reperfusion. *Liver Transpl.* **15**(8), 939-947 (2009).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/15/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM