

PRODUCT INFORMATION



SQ-109

Item No. 44640

CAS Registry No.: 502487-67-4

Formal Name: N1-[(2E)-3,7-dimethyl-2,6-octadien-1-yl]-N2-tricyclo[3.3.1.1^{3,7}]dec-2-yl-1,2-ethanediamine

MF: C₂₂H₃₈N₂

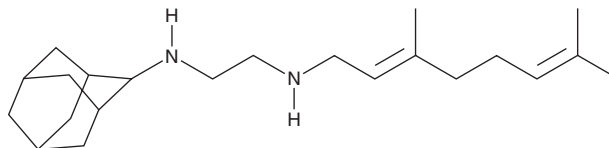
FW: 3306

Purity: ≥95%

Supplied as: A neat oil

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

SQ-109 is supplied as a neat oil. A stock solution may be made by dissolving the SQ-109 in the solvent of choice, which should be purged with an inert gas. SQ-109 is soluble (≥10 mg/ml) in ethanol.

Description

SQ-109 is an antibacterial, antifungal, and antiparasitic agent.¹⁻⁴ It is active against *M. tuberculosis* (MIC = 1.56 μM), several fungi, including various strains of *C. albicans*, *C. kefyr*, and *C. neoformans* (MICs = 0.125-32 μg/ml), and *P. falciparum* (IC₅₀s = 1.58, 0.38, and 0.14 μM for asexual parasites, immature-stage gametocytes, and late-stage gametocytes, respectively).^{1,3,4} SQ-109 induces accumulation of trehalose monomycolate, a cell wall mycolate precursor, in *M. tuberculosis in vitro*, and mutations in the gene encoding the trehalose monomycolate exporter MmpL3 confer resistance to SQ-109.² *In vivo*, SQ-109 (1 mg/kg, p.o.) decreases the number of spleen and lung colony-forming units (CFUs) in a mouse model of chronic *M. tuberculosis* infection.¹

References

1. Protopopova, M., Hanrahan, C., Nikonenko, B., *et al.* Identification of a new antitubercular drug candidate, SQ109, from a combinatorial library of 1,2-ethylenediamines. *J. Antimicrob. Chemother.* **56**(5), 968-974 (2005).
2. Tahlan, K., Wilson, R., Kastrinsky, D.B., *et al.* SQ109 targets MmpL3, a membrane transporter of trehalose monomycolate involved in mycolic acid donation to the cell wall core of *Mycobacterium tuberculosis*. *Antimicrob Agents Chemother.* **56**(4), 1797-1809 (2012).
3. Malwal, S.R., Garcia-Rubio, R., Kordalewska, M., *et al.* Broad-spectrum activity and mechanisms of action of SQ109 on a variety of fungi. *ACS Infect. Dis.* **11**(6), 1662-1672 (2015).
4. Watson, S.J., van der Watt, M.E., Theron, A., *et al.* The tuberculosis drug candidate SQ109 and its analogs have multistage activity against *Plasmodium falciparum*. *ACS Infect. Dis.* **10**(9), 3358-3367 (2014).

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.

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