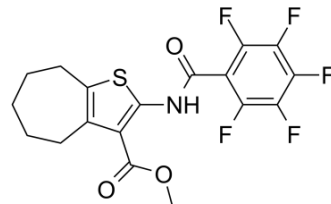


## Thiophene-2

Cat. No.:	HY-117145
CAS No.:	420089-51-6
Molecular Formula:	C <sub>18</sub> H <sub>14</sub> F <sub>5</sub> NO <sub>3</sub> S
Molecular Weight:	419.37
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Thiophene-2 (TP2) is a specific polyketide synthase 13 (Pks13) inhibitor. Thiophene-2 inhibits mycolic acid biosynthesis and rapidly leads to mycobacterial cell death. Thiophene-2 is active against <i>Mycobacterium tuberculosis</i> with a MIC value of 1 μM, and has potent anti-tuberculosis activity <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	MIC: 1 μM ( <i>Mycobacterium tuberculosis</i> )
<b>In Vitro</b>	<p>In vitro, TP inhibits fatty acyl-AMP loading onto Pks13. Thiophene-2 (TP2; 0-125 μM) inhibits loading of wild-type <i>Mycobacterium tuberculosis</i> (Mtb) Pks13 (Pks13_WT) in a dose-dependent manner. Thiophene-2 also inhibits palmitic acid (FL C16) loading onto the TP-resistant F79S mutant protein<sup>[1]</sup>.</p> <p>Thiophene-2 has an IC<sub>50</sub> versus monkey kidney Vero cells and human liver carcinoma HepG2 cells of 17.5 and 7.30 μM, respectively. Significant intracellular killing activity within BCG-infected J774A.1 macrophage cells is observed at Thiophene-2 concentrations of 12.8 μM<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

### REFERENCES

[1]. Regina Wilson, et al. Antituberculosis Thiophenes Define a Requirement for Pks13 in Mycolic Acid Biosynthesis. *Nat Chem Biol*. 2013 Aug;9(8):499-506.

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA