Aurora inhibitor (compound 1)

![Chemical Structure](image)

**Chemical Formula:** $C_{24}H_{28}N_8O_2$

**Molecular Weight:** 430.50

<table>
<thead>
<tr>
<th>Category</th>
<th>Parameter</th>
<th>Description</th>
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<tr>
<td>Compound</td>
<td>Name</td>
<td>Aurora inhibitor (compound 1)</td>
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<tr>
<td></td>
<td>Citation</td>
<td><em>ACS. Chem. Biol.</em> 2011, doi: 10.1021/cb200305u.</td>
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<td>Chemical descriptors</td>
<td>CN(C1=CN=C(NC2=CC=C(N3CCC(O)CC3(C=C2)N=C1N(C)C4=CC5=O)C5=O)C4=C5CC=CC=C4)</td>
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<td>Chemical name</td>
<td>2-[(4-(4-hydroxypiperidin-1-yl)phenyl)amino]-5,11-dimethyl-5H-benzo[e]pyrimido[5,4-b][1,4]diazepin-6(11H)-one</td>
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<td>Availability</td>
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<tr>
<td>In vitro profiling</td>
<td>Target (potency)</td>
<td><strong>Aurora A/B/C</strong> (5.6/18.4/24.6 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
<td>DCAMKL2 (87.7 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
<td>LRRK2 (30.5 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
<td>LRRK2(G2019S) (10.7 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
<td>MAP3K2 (155 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
<td>MAP3K3 (120 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
<td>NUAK1 (52.2 nM IC$_{50}$ in Invitrogen biochemical assay)</td>
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<td>Target (potency)</td>
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<td>Mechanism of inhibition</td>
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<td>Structure of target-probe complex</td>
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</table>
Cellular profiling

Validation of cellular target

Compound 1 dose-dependently inhibited Aurora A autophosphorylation monitored by T288 residue in HeLa S3 cell, completely inhibited Aurora A at 250 nM.

Compound 1 dose-dependently inhibited Aurora B autophosphorylation monitored by T232 residue in HeLa S3 cell, completely inhibited Aurora A at 250 nM.

Compound 1 dose-dependently inhibited HCT116 cell growth with EC50 of 9.5 nM.

Compound 1 dose-dependently inhibited HT29 cell growth with EC50 of 55 nM.

Compound 1 dose-dependently inhibited HeLa cell growth with EC50 of 16.7 nM.

Compound phenotypes were compared to literature. The cellular effects were correlated with in vitro biochemical activities.

Pharmacodynamics

Pharmacokinetics

Synthetic scheme