Interleukin-1 receptor-associated kinase (IRAK) is first described as a signal transducer for the proinflammatory cytokine IL-1 and is later implicated in signal transduction of other members of the Toll-like receptor (TLR)/IL-1R family. Four different IRAK-like molecules have been identified: two active kinases, IRAK-1 and IRAK-4, and two inactive kinases, IRAK-2 and IRAK-M. All IRAKs mediate activation of NF-κB and MAPK pathways. IRAKs are protein kinases involved in signalling innate immune responses from TLRs. After TLR-4 and TLR-2 recognize pathogen-associated molecular patterns, such as LPS and peptidoglycan, all IRAK members form multimeric receptor complexes.

IRAKs are essential signaling intermediates in the TLR/IL-1R pathway to both IKK and MAPKs activation. These two pathways are central to the activation of several transcription factors, including NF-κB and AP-1, which contribute to the establishment of an immune response.
### IRAK Inhibitors & Modulators

#### AZ1495

**Bioactivity:** AZ1495 (compound 28) is an oral active inhibitor of Interleukin-1 receptor associated kinase 4 (IRAK4), with IC\textsubscript{50} values of 5 nM and 23 nM for IRAK4 and IRAK1, respectively. Shows activity in treatment of mutant MYD88 L265P diff. 

**Purity:** 99.83%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

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#### CA-4948

**Bioactivity:** CA-4948 is a selective and potent IRAK4 inhibitor. 

**Purity:** 98.44%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg

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#### Ginsenoside Rb1

**Bioactivity:** Ginsenoside Rb1, a main constituent of the root of Panax ginseng, inhibits Na\textsuperscript{+}, K\textsuperscript{+}-ATPase activity with an IC\textsubscript{50} of 6.3±1.0 μM. Ginsenoside also inhibits IRAK-1 activation and phosphorylation of NF-κB p65.

**Purity:** 98.0%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg

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#### IRAK inhibitor 1

**Bioactivity:** IRAK inhibitor 1 is a potent IRAK-4 inhibitor with IC\textsubscript{50} of 216 nM, is poorly active against JNK-1 and JNK-2 with IC\textsubscript{50} of 3.801 μM, and >10 μM, respectively.

**Purity:** 99.47%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

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#### IRAK inhibitor 2

**Bioactivity:** IRAK inhibitor 2 is interleukin-1 receptor associated kinase inhibitor.

**Purity:** 97.23%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg

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#### IRAK inhibitor 3

**Bioactivity:** IRAK inhibitor 3 is an interleukin-1 (IL-1) receptor-associated kinase (IRAK) kinase modulator extracted from patent WO2008030579 A2.

**Purity:** 96.20%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

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#### IRAK inhibitor 4

**Bioactivity:** IRAK inhibitor 4 is an interleukin-1 receptor associated kinase 4 (IRAK4) inhibitor.

**Purity:** 98.05%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg

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#### IRAK inhibitor 6

**Bioactivity:** IRAK inhibitor 6 is an inhibitor of interleukin-1 receptor associated kinase 4 (IRAK-4) with IC\textsubscript{50} of 160 nM.

**Purity:** 99.75%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

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#### IRAK-1-4 Inhibitor I

**Bioactivity:** IRAK-1-4 Inhibitor I is an inhibitor of interleukin-1 receptor-associated kinase 1/4 (IRAK 1/4) with IC\textsubscript{50} of 0.2 μM and 0.3 μM, respectively.

**Purity:** 98.49%

**Clinical Data:** No Development Reported

**Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg, 100 mg

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### Contact Information

Tel: 609-228-6898  Fax: 609-228-5909  Email: sales@MedChemExpress.com
<table>
<thead>
<tr>
<th>IRAK4-IN-1</th>
<th>Cat. No.: HY-101922</th>
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<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>IRAK4-IN-1 is an interleukin-1 receptor associated kinase 4 (IRAK4) inhibitor with an IC\textsubscript{50} of 7 nM.</td>
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<td><strong>Purity:</strong></td>
<td>99.01%</td>
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<td><strong>Clinical Data:</strong></td>
<td>No Development Reported</td>
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<td><strong>Size:</strong></td>
<td>10 mM x 1 mL in DMSO, 1 mg, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
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<table>
<thead>
<tr>
<th>PF06650833</th>
<th>Cat. No.: HY-19836</th>
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<tbody>
<tr>
<td><strong>Bioactivity:</strong></td>
<td>PF06650833 is an inhibitor of Interleukin-1 receptor associated kinase 4 (IRAK4), and used to treat diseases such as rheumatoid arthritis, lupus, and lymphomas.</td>
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<tr>
<td><strong>Purity:</strong></td>
<td>98.68%</td>
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<tr>
<td><strong>Clinical Data:</strong></td>
<td>Phase 2</td>
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<tr>
<td><strong>Size:</strong></td>
<td>10 mM x 1 mL in DMSO, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
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