Chloride Channel

Cl⁻ Channels

Chloride channels represent a relatively under-explored target class for drug discovery as elucidation of their identity and physiological roles has lagged behind that of many other drug targets. Chloride channels are involved in a wide range of biological functions, including epithelial fluid secretion, cell-volume regulation, neuroexcitation, smooth-muscle contraction and acidification of intracellular organelles. Mutations in several chloride channels cause human diseases, including cystic fibrosis, macular degeneration, myotonia, kidney stones, renal salt wasting and hyperekplexia. Chloride-channel modulators have potential applications in the treatment of some of these disorders, as well as in secretory diarrhoeas, polycystic kidney disease, osteoporosis and hypertension.

Chloride channel accessory proteins, also known as calcium-activated chloride channel regulators (CLCA proteins), are a family of transmembrane proteins that have been suggested to have a role in chloride conductance in epithelial cells.
# Chloride Channel Inhibitors & Activators

## Adjudin
**Cat. No.: HY-18996**

Adjudin is an extensively studied male contraceptive with a superior mitochondria-inhibitory effect. Adjudin is also a potent Cl channel blocker.

| Purity: | >98.0% |
| Clinical Data: | No Development Reported |
| Size: | 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg |

## CaCCinh-A01
**Cat. No.: HY-100611**

CaCCinh-A01 is an inhibitor of both TMEM16A and calcium-activated chloride channel (CaCC) with IC₅₀ of 2.1 and 10 μM, respectively.

| Purity: | 99.60% |
| Clinical Data: | No Development Reported |
| Size: | 10 mM × 1 mL, 10 mg, 25 mg, 50 mg, 100 mg |

## Chlorotoxin
**Cat. No.: HY-P0173A**

Chlorotoxin is a 36 amino-acid peptide from the venom of the Israeli scorpion Leirus quinquestriatus with anticancer activity. Chlorotoxin is a chloride channel blocker.

| Purity: | >98.0% |
| Clinical Data: | No Development Reported |
| Size: | 100 μg, 500 μg, 1 mg |

## CaCCinh-A01 TFA
**Cat. No.: HY-P0173B**

Chlorotoxin TFA is a peptide isolated from the venom of the scorpion Leirus quinquestriatus, acts as a chloride channel blocker. Anti-cancer activity.

| Purity: | >98% |
| Clinical Data: | No Development Reported |
| Size: | 100 μg, 500 μg, 1 mg |

## DCPIB
**Cat. No.: HY-103371**

DCPIB is a selective, reversible and potent inhibitor of volume-regulated anion channels (VRAC), voltage-dependently activates potassium channels TREK1 and TRAAK, inhibits TRESK, TASK1 and TASK3 (IC₅₀, 0.14, 0.95, 50.72 μM, respectively).

| Purity: | 99.81% |
| Clinical Data: | No Development Reported |
| Size: | 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg |

## Eact
**Cat. No.: HY-103368**

Eact is a selective and potent activator of TMEM16A, directly activates the TRPV1 channels TMEM16A in sensory nociceptors and produces itch, acute nociception and thermal hypersensitivity.

| Purity: | >98% |
| Clinical Data: | No Development Reported |
| Size: | 1 mg, 5 mg |

## Flufenamic acid
**Cat. No.: HY-81221**

Flufenamic acid is a non-steroidal anti-inflammatory agent, inhibits cyclooxygenase (COX), activates AMPK, and also modulates ion channels, blocking chloride channels and L-type Ca²⁺ channels, modulating non-selective cation channels (NSC), activating K⁺ channels.

| Purity: | 99.92% |
| Clinical Data: | Launched |
| Size: | 10 mM × 1 mL, 100 mg |

## Endovion (NS3728)
**Cat. No.: HY-105917**

Endovion (NS3728) is a pharmacological anion channel inhibitor (like chloride channel) and the specific VRAC/VSOAC blocker. Endovion (NS3728) is also an Anoctamin-1 (ANO 1) channel inhibitor.

| Purity: | 99.27% |
| Clinical Data: | No Development Reported |
| Size: | 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg |

## H100
**Cat. No.: HY-100322**

H100 is a Cl⁻ transport inhibitor, with partial effects against both the NaK2Cl cotransporter and the Band 3 anion exchanger, but no effect against KCl cotransporter, in human erythrocytes.

| Purity: | >98% |
| Clinical Data: | No Development Reported |
| Size: | 1 mg, 5 mg, 10 mg |

## Lubiprostone (RU-0211; SPI-0211)
**Cat. No.: HY-B0679**

Lubiprostone(SPI-0211;RU0211) is a gastrointestinal agent used for the treatment of idiopathic chronic constipation.

| Purity: | >98.0% |
| Clinical Data: | Launched |
| Size: | 10 mM × 1 mL, 1 mg, 5 mg, 10 mg, 50 mg |

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<table>
<thead>
<tr>
<th><strong>Meticrane</strong></th>
<th><strong>Cat. No.: HY-80908</strong></th>
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<tbody>
<tr>
<td>Meticrane is a diuretic. Meticrane inhibits the reabsorption of sodium and chloride ions in the distal convoluted tubule. Meticrane is used to treat essential hypertension.</td>
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<tr>
<td><strong>Purity:</strong> 98.79%</td>
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<tr>
<td><strong>Clinical Data:</strong> Launched</td>
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<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 100 mg</td>
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<thead>
<tr>
<th><strong>Niflumic acid</strong></th>
<th><strong>Cat. No.: HY-80493</strong></th>
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</thead>
<tbody>
<tr>
<td>Niflumic acid, a Ca2+-activated Cl- channel blocker, is an analgesic and anti-inflammatory agent used in the treatment of rheumatoid arthritis.</td>
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<tr>
<td><strong>Purity:</strong> 99.86%</td>
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<tr>
<td><strong>Clinical Data:</strong> Launched</td>
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<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 100 mg</td>
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<thead>
<tr>
<th><strong>NPPB</strong></th>
<th><strong>Cat. No.: HY-101012</strong></th>
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<tbody>
<tr>
<td>NPPB is a blocker of the outwardly rectifying chloride channel (ORCC).</td>
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<tr>
<td><strong>Purity:</strong> 99.89%</td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 10 mg, 50 mg, 100 mg</td>
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<thead>
<tr>
<th><strong>NS1652</strong></th>
<th><strong>Cat. No.: HY-100244</strong></th>
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<tbody>
<tr>
<td>NS1652 is a reversible anion conductance inhibitor, blocks chloride channel, with an IC50 of 1.6 μM in human and mouse red blood cells.</td>
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<tr>
<td><strong>Purity:</strong> &gt;98%</td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
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<tr>
<td><strong>Size:</strong> 1 mg, 5 mg, 10 mg</td>
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<thead>
<tr>
<th><strong>R(+)-IAA-94</strong> <em>(R(+)-Methylindazole)</em></th>
<th><strong>Cat. No.: HY-12693</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>R(+)-IAA-94 is a potent indanyloxyacetic acid blocker of epithelial chloride channels. IC50 value: Target: IAA-94 has been employed in modulating chloride channel function to probe the dynamics and function of the channels.</td>
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<tr>
<td><strong>Purity:</strong> 99.70%</td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
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<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 10 mg, 50 mg</td>
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<thead>
<tr>
<th><strong>Shikonin</strong> <em>(C.I. 75535; Isoarnebin 4)</em></th>
<th><strong>Cat. No.: HY-N0822</strong></th>
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</thead>
<tbody>
<tr>
<td>Shikonin is a major component of a Chinese herbal medicine named zicao. Shikonin is a potent TMEM16A chloride channel inhibitor with an IC50 of 6.5 μM. Shikonin is a specific pyruvate kinase M2 (PKM2) inhibitor and can also inhibit TNF-α and NF-κB pathway.</td>
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<tr>
<td><strong>Purity:</strong> 99.80%</td>
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<td><strong>Clinical Data:</strong> No Development Reported</td>
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<tr>
<th><strong>T16Ainh-A01</strong></th>
<th><strong>Cat. No.: HY-100612</strong></th>
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<tbody>
<tr>
<td>T16Ainh-A01, an aminophenylthiazole, is a potent transmembrane protein 16A (TMEM16A) inhibitor, inhibiting TMEM16A-mediated chloride currents with an IC50 value of ~1 μM. TMEM16A (ANO1) functions as a calcium-activated chloride channel (CaCC).</td>
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<tr>
<td><strong>Purity:</strong> &gt;99.0%</td>
<td></td>
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<tr>
<td><strong>Clinical Data:</strong> No Development Reported</td>
<td></td>
</tr>
<tr>
<td><strong>Size:</strong> 10 mM × 1 mL, 1 mg, 5 mg, 10 mg</td>
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