Carbonic Anhydrase

Carbonate dehydratase

Carbonic anhydrase is a zinc-containing enzyme that catalyzes the reversible hydration of carbon dioxide: \( \text{CO}_2 + \text{H}_2\text{O} \rightleftharpoons \text{HCO}_3^- + \text{H}^+ \). The enzyme is the target for drugs, such as Acetazolamide, Methazolamide, and Dichlorphenamide, for the treatment of glaucoma. There are three evolutionarily unrelated CA families, designated alpha, beta, and gamma. All known CAs from the animal kingdom are of the alpha type. There are seven mammalian CA isozymes with different tissue distributions and intracellular locations, CA I-VII.

Carbonic anhydrase is one of the core enzyme in organism, which involves in osmoregulation, ionic regulation, acid-base regulation and other physiological and biochemical process.
## Carbonic Anhydrase Inhibitors

### 2-Aminobenzenesulfonamide
**(Orthanilamide)**
Cat. No.: HY-82147

2-Aminobenzenesulfonamide is a carbonic anhydrase IX inhibitor.

- **Purity:** 99.88%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 100 mg

### Acetazolamide
Cat. No.: HY-B0782

Acetazolamide is a carbonic anhydrase (CA) IX inhibitor with an IC₅₀ of 30 nM for hCA IX. Diuretic effects.

- **Purity:** 99.87%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 1 g, 5 g

### Benzthiazide
Cat. No.: HY-B1424

Benzthiazide is a long-acting diuretic and a hypertension agent. Benzthiazide is an inhibitor of carbonic anhydrase 9 (CA9), with Kᵢ of 8.0, 8.8 and 10 nM for CA9, CA2 and CA1, respectively. Benzthiazide also suppresses proliferation of cancer cells.

- **Purity:** >99.0%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 100 mg, 500 mg

### Brinzolamide
**(AL-4862)**
Cat. No.: HY-B0588

Brinzolamide(AL 4862) is a potent carbonic anhydrase II inhibitor with IC₅₀ of 3.19 nM.

- **Purity:** 99.78%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

### Dichlorphenamide
**(Diclofenamide)**
Cat. No.: HY-B0397

Dichlorphenamide(Diclofenamide) is a carbonic anhydrase inhibitor that is used in the treatment of glaucoma.

- **Purity:** >98.0%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

### Dimethylfraxetin
**(6,7,8-Trimethoxycoumarin; Fraxetin dimethyl ether)**
Cat. No.: HY-N0085

Dimethylfraxetin is a carbonic anhydrase inhibitor, with a Kᵢ value of 0.0097 μM.

- **Purity:** 99.97%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 5 mg, 10 mg, 25 mg

### Dorzolamide hydrochloride
**(L671152 hydrochloride; MK507 hydrochloride)**
Cat. No.: HY-B0109A

Dorzolamide hydrochloride (L671152 Hcl; MK507 Hcl) is an anti-glaucoma agent, which is a carbonic anhydrase inhibitor. Target: carbonic anhydrase (CA) Dorzolamide hydrochloride is a carbonic anhydrase inhibitor.

- **Purity:** 99.47%
- **Clinical Data:** Launched
- **Size:** 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

### Ethoxzolamide
**(Redupresin; L-643786; PNU-4191)**
Cat. No.: HY-B1480

Ethoxzolamide is a carbonic anhydrase inhibitor with Kᵢ of 1 nM.

- **Purity:** 98.78%
- **Clinical Data:** No Development Reported
- **Size:** 10 mM × 1 mL, 100 mg
Indisulam (E 7070)
Cat. No.: HY-13650
Indisulam (E 7070) is a carbonic anhydrase inhibitor and a G1-targeting agent. Indisulam causes a blockade in the G1/S transition through inhibition of the activation of both cyclin-dependent kinase 2 (CDK2) and cyclin E.

Purity: 98.92%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg

Methazolamide (L584601)
Cat. No.: HY-B0553
Methazolamide is a carbonic anhydrase inhibitor used to treat glaucoma.

Purity: 97.72%
Clinical Data: Launched
Size: 10 mM × 1 mL, 100 mg, 500 mg, 1 g, 5 g

Sultiame
Cat. No.: HY-108316
Sultiame is a carbonic anhydrase inhibitor, widely used as an antiepileptic drug.

Purity: 99.11%
Clinical Data: No Development Reported
Size: 5 mg

Tioxolone
Cat. No.: HY-B0483
Tioxolone, a metalloenzyme carbonic anhydrase I inhibitor, is an anti-acne preparation.

Purity: >98.0%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 1 g

U-104 (NSC-213841; MST-104)
Cat. No.: HY-13513
U-104 is a potent carbonic anhydrase (CA) inhibitor for CA IX and CA XII with Ki of 45.1 nM and 4.5 nM; low inhibition for CA I and CA II.

Purity: 99.55%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg