



# Ion channel modulators

Alfa Aesar, now part of Thermo Fisher Scientific, offers a range of high quality ion channel modulators for sodium, potassium and calcium channel proteins.

Ion channels are pore forming membrane proteins that move ions across cell membranes. These proteins are found in the membranes of almost all types of plant, animal and bacterial cells. Ion channel function is essential to many types of biological processes such as synaptic transmission, sensory transduction and generating action potentials in neurons and muscle cells. The proteins also help to regulate cell volume and control ion concentrations in epithelial and secretory cells. Sodium, potassium and calcium channels are particularly important to these processes.

A wide variety of molecules is available to modulate ion channel activity. These compounds include toxins, neurotransmitters and small organic ligands that block, increase or decrease ion transport across a membrane. Ion channel modulators allow the study of the effects of ion transport in various cellular and physiological processes.

## Calcium channel modulators

| Stock No. | Description                         | Action   |
|-----------|-------------------------------------|--|
| J63020    | Antibiotic A23187, 98%              | Ionophore highly selective for Ca <sup>2+</sup>  |
| J62164    | Amlodipine besylate, 98+%           | Potent, long-acting L-type calcium channel blocker                                       |
| J64568    | Cinnarizine                         | Calcium channel antagonist   |
| J60887    | Dantrolene sodium salt              | Ryanodine receptor antagonist. Calcium channel inhibitor                                 |
| J63245    | (+)-cis-Diltiazem hydrochloride     | L-type Ca <sup>2+</sup> channel antagonist   |
| J60496    | Manidipine dihydrochloride          | Potent L-type Ca <sup>2+</sup> channel antagonist  |
| J62811    | Nifedipine, 98%                     | L-type Ca <sup>2+</sup> channel blocker  |
| J61287    | Nimodipine, 98+%                    | L-type Ca <sup>2+</sup> channel blocker  |
| J63272    | Tetracaine hydrochloride, 98%       | Allosteric RyR calcium channel blocker. Potent local anesthetic and antipruritic effects |
| J61535    | (+/-)-Verapamil hydrochloride, 99+% | L-type Ca <sup>2+</sup> channel blocker  |

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## Potassium channel modulators

| Stock No. | Description                    | Action  |
|-----------|--------------------------------|---|
| J62741    | Alaproclate hydrochloride, 96% | Potent, selective serotonin uptake inhibitor. Teversible, non-competitive NMDA antagonist         |
| J60961    | Apamin                         | Blocker of small conductance Ca <sup>2+</sup> -activated K <sup>+</sup> channels                  |
| J60339    | Astemizole, 99+%               | Potent, selective histamine H1 receptor antagonist and potent hERG K <sup>+</sup> channel blocker |
| J65342    | Cytochalasin B                 | Cell permeable actin polymerization inhibitor. Reversible KV1.5 blocker                           |
| J66010    | Diazoxide, 98%                 | Selective KIR6.x (ATP-sensitive K <sup>+</sup> channel) activator                                 |
| J63398    | Glipizide                      | Sulfonylurea receptor and ATP-sensitive K <sup>+</sup> channel blocker                            |
| J61803    | Minoxidil                      | KATP channel activator  |
| J60879    | Nicorandil, 98+%               | ATP-sensitive K <sup>+</sup> channel activator  |
| J60955    | Tamoxifen citrate              | Estrogen receptor antagonist and partial agonist; inhibits cloned HERG potassium channels         |
| B21698    | Tolbutamide, 98%               | K <sup>+</sup> channel blocker  |

## Sodium channel modulators

| Stock No. | Description  | Action  |
|-----------|--|---|
| J62056    | Aconitine, 98%   | Voltage-gated Na <sup>+</sup> channel activator                       |
| J62168    | Amiloride hydrochloride dihydrate                      | eNaC blocker  |
| J62742    | Bupivacaine  | Cell-permeable sodium channel blocker                                 |
| J61330    | Dyclonine hydrochloride                                | Sodium channel blocker  |
| J63527    | Flecainide acetate, 98%                                | Sodium channel blocker  |
| J63035    | Lidocaine hydrochloride monohydrate, 98%               | Voltage gated sodium channel blocker                                  |
| J60648    | Prilocaine hydrochloride, 98%                          | Amino amide anesthetic. Voltage-gated Na <sup>+</sup> channel blocker |
| A17485    | 2-Diethylaminoethyl 4-aminobenzoate hydrochloride, 99% | Na <sup>+</sup> channel blocker. DNA methylation inhibitor            |
| J60678    | Lidocaine N-ethyl bromide, 99+%                        | Na <sup>+</sup> channel blocker                                       |
| J62324    | Veratridine, 97+%                                      | Na <sup>+</sup> channel opener  |

Full product listing is available online.

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