

# TRP Channel Modulators

Transient receptor potential (TRP) channels are ion channels located on the plasma membrane of many different cell types. TRP channels play a significant role in sensory transduction, pain signal relay, temperature, taste, and pressure.

TRP vanilloid (TRPV) channels are the most well-studied of these channels. **Capsaicin (C0266)** and **Piperine (P3465)** are TRPV channel activators found in plant sources and are responsible for the hot or spicy flavor of some peppers<sup>1</sup>.

TRP canonical (TRPC) channels are often found on cardiomyocytes and nerves; TRPC channels play a role in cardiac hypertrophy<sup>2</sup>. Amyotrophic lateral sclerosis (ALS) treatment **Riluzole (R3347)** activates TRPC5 channels. **Clemizole (C4417)**, a NS4B and histamine receptor blocker, inhibits TRPC5 channels, potentially regulating neurite length<sup>3</sup>.

TRP melastatin-like (TRPM) channels are involved in temperature and taste transduction as well as cell adhesion. **Iceillin (I0933)** activates TRPM8 channels and inhibits TRPV3 channels, acting as a cooling agent<sup>4</sup>. Other TRP channels include TRP Ankyrin (TRPA) channels, TRP polycystin (TRPP) channels and TRP mucolipin (TRPML) channels.

#### References:

1. Kissin I. Anesth Analg. 2008 Jul;107(1):271-81.
2. Bush EW, Hood DB, Papst PJet al. J Biol Chem. 2006 Nov 3;281(44):33487-96.
3. Richter JM, Schaefer M, Hill K. Mol Pharmacol. 2014 Nov;86(5):514-21.
4. Sherkheli MA, Gisselmann G, Hatt H. ScientificWorldJournal. 2012;2012:982725.

#### Representative Compounds and Targets:

##### TRPV

**A7085 Arvanil:** TRPV1 activator  
**A9818 Azalastine:** TRPV1 activator  
**C0266 Capsaicin:** TRPV activator  
**C0368 Carveol:** TRPV3 activator  
**G3252 6-Gingerol:** TRPV1 activator  
**M1979 Methyl Salicylate:** TRPV1 activator/blocker  
**N1755 Neomycin Sulfate:** TRPV1 blocker  
**P1634 Peimine:** TRPV1 and TRPA1 blocker  
**P1635 Peiminine:** TRPV1 and TRPA1 blocker  
**P3465 Piperine:** TRPV activator  
**R1774 Resiniferatoxin:** TRPV activator  
**S8151 Sumatriptan:** TRPV1 blocker  
**T6902 Tranilast:** TRPV2 blocker

##### TRPC

**C4417 Clemizole:** TRPC5 blocker  
**F4483 Flufenamic Acid:** TRPC3 and TRPM2 blocker  
**N5311 Nocistatin:** TRPC activator  
**R3347 Riluzole:** TRPC5 activator

##### TRPM

**G3456 Ginsenoside Rd:** TRPM7 blocker  
**I0933 Iceillin:** TRPM8 activator, TRPV3 blocker  
**P7023 Pregnenolone:** TRPM3 activator

##### TRPA

**A0817 1'-Acetoxychavicol Acetate:** TRPA activator  
**E7556 Etodolac:** TRPA activator  
**P0270 Parthenolide:** TRPA activator

