

# Inscalis™ Insecticide Mode of Action

Inscalis Insecticide is classified as a chordotonal organ TRPV channel modulator insecticide based on its activity on this molecular target. Chordotonal organs, present only in insects and crustaceans, are biological stretch sensors that span joints and provide insects with their senses of hearing, orientation with respect to gravity and balance, as well as the position, movement and acceleration senses that are critical for coordinated movement. Inscalis Insecticide acts selectively on these stretch sensors by binding to the TRPV ion channels, which only occur in the sensory neurons of chordotonal organs. When Inscalis Insecticide selectively binds to TRPV channels, it causes them to open and generate continuous chordotonal nerve signals independent of joint movement. This false stretch signalling makes it impossible for the brain to detect sound, gravity and the movement and position of body parts. Deaf, disoriented and uncoordinated, Inscalis Insecticide-treated insects rapidly cease feeding and die from dehydration and starvation.

## Chordotonal Organs in Insects

### Antennae

React to:

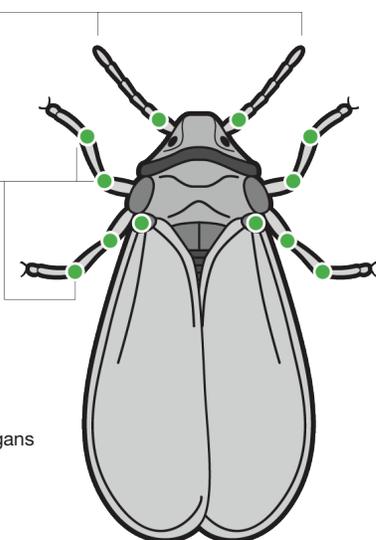
- Air motion
- Gravity
- Sound

### Joints

React to:

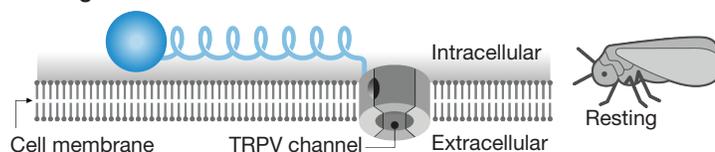
- Muscle contraction
- Movement

● Locations of chordotonal organs

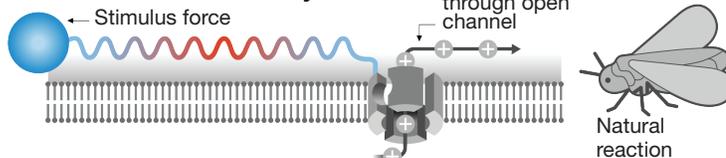


## Action of Inscalis Insecticide on Chordotonal Organs

### Resting state



### TRPV channel activation by stimulus



### TRPV channel activation by Inscalis Insecticide

