Persistent or chronic pain is the primary reason people seek medical care, yet current therapies are either limited in efficacy or cause intolerable side effects. Bsense Bio Therapeutics develops a small molecule that demonstrate a novel mechanism of action (MOA) of dual modulation of Kv7.2/3 and TRPV1. High potency compound translated to significant analgesia in vivo in several animal models of acute and chronic pain. Importantly, this novel and specific MOA is not associated with any previously described Kv7.2/3 or TRPV1 class-specific side effects. This therapeutic approach may enable the development of potent, safe and non-addictive drugs for pain management.