Icilin is an agonist at transient receptor potential melastatin 8 (TRPM8) channels; it may block transient receptor potential vanilloid 3 (TRPV3) channels. Icilin displays both hyperalgesic and analgesic activities as well as anti-inflammatory and anticancer properties. Activation of TRPM8 channels induces hyperalgesia and allodynia, but long-term activation desensitizes the channels to induce pain relief. Like menthol, icilin acts as a cooling agent, as TRPM8 channels are cold-sensitive. In animal models of colitis, icilin decreases levels of pro-inflammatory cytokines. Icilin inhibits cell motility in pancreatic ductal adenocarcinoma cells and also decreases levels of E2F1 and induces G1 phase cell cycle arrest in prostate cancer cells.

References


Sherkheli MA, Gisselmann G, Hatt H. Supercooling agent icilin blocks a warmth-sensing ion channel TRPV3.