Bumetanide is a loop diuretic that is clinically used to treat congestive heart failure. Bumetanide exhibits natriuretic activity, inhibiting Na+/K+/2Cl- symporter 1 (NKCC1) and K+/Ca2+ co-transporter 2 (KCC2), decreasing fluid secretion and Na+/K+ transport. Bumetanide also exhibits anxiolytic, neuroprotective, and antiepileptic/anticonvulsant activities. Bumetanide induces hyperpolarization in kidney cells, increasing whole-cell conductance and intracellular Ca2+ levels. In animal models, bumetanide decreases conditioned anxiety in contextual fear and startle assays. In injured neurons, this compound inhibits upregulation of low-affinity NGF/pan-neurotrophin receptor p75NTR, preventing cell death. Additionally, bumetanide’s inhibition of NKCC1 co-transporters in neurons alters GABA signaling, inhibiting seizure-induced accumulation of Cl- and facilitation of recurrent seizures in vivo.

References


Caution: This product is intended for laboratory and research use only. It is not for human or drug use.