

Dopamine inhibits ATP-induced responses in the cat petrosal ganglion in vitro

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The petrosal ganglion (PG) provides sensory innervation to the carotid sinus and carotid body through the carotid (sinus) nerve (CN). Application of either acetylcholine (ACh) or adenosine 5'-triphosphate (ATP) to the PG superfused in vitro activates CN fibers. Dopamine (DA) modulates the effects of ACh. We have previously shown that DA when applied to the PG modulates the effects of ACh on carotid sinus nerve fibers. We currently report the effects of DA on the ATP-induced responses in the isolated PG in vitro. While DA had no effect on the basal activity recorded from the CN, it reduced ATP-induced responses in a dose-dependent manner, when preceding ATP applications by 30 s. Our results suggest that DA - a transmitter present in a group of PG neurons and in carotid body cells - may act as an inhibitory modulator of ATP-evoked responses in PG neurons. © 2002 Elsevier Science B.V. All rights reserved.