

# Nicotinic and muscarinic components in acetylcholine stimulation of porcine adrenal medullary cells

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Adrenal medullary chromaffin cells secrete catecholamines (CA) in response to cholinergic receptor activation by acetylcholine (ACh) released from splenic nerve terminals. In cultured bovine chromaffin cells nicotinic receptors play a preponderant (> 90%) role in the control of CA release. By contrast, we found and report here that up to 40% of the ACh-evoked CA secretion from cultured porcine chromaffin cells can be associated with muscarinic receptor activation. The following results support our belief that in porcine adrenal medullary cells ACh (100  $\mu$ M) evoked CA secretion is mediated by both nicotinic and muscarinic cholinergic receptors. 1) Hexamethonium (100  $\mu$ M), a nicotinic receptor antagonist, inhibited ACh-induced CA secretion to ca. 40% of the control release and atropine (1  $\mu$ M), a muscarinic receptor antagonist, inhibited to ca. 60% of the control value. 2) We also found that ACh(100  $\mu$ M) evoked intracellular  $Ca^{2+}$  concentration ( $[Ca^{2+}]_i$ ) rise was inhibited by these receptors.