

## ADENOSINE ENHANCES THE RELAXING INFLUENCE OF RAT AND BOVINE RETINAL TISSUE.

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Retinal tissue from different species continuously releases a factor lowering tone of isolated arteries. This was demonstrated by placing retinal tissue in close proximity to an isolated artery. This factor is called the "retinal relaxing factor" (RRF) (Delaey & Van de Voorde, *Circ Res* 1998, 83:714-720). The potential influence of adenosine on this relaxing influence was investigated using isometric tension recording of isolated arteries. The presence of bovine retinal tissue enhanced the vasorelaxing effect of adenosine on isolated bovine retinal artery. The presence of a non-selective adenosine receptor antagonist (8-(p-sulfophenyl)theophylline, 0.1 mM) showed a significant blocking effect of adenosine. When the retinal arteries were contracted with 120 mM K<sup>+</sup>, adenosine no longer induced relaxation of the preparation with bovine retinal tissue. This is in line with the concept that adenosine enhances the influence of RRF. Neither a NO-synthase inhibitor (nitro-L-arginine, 0.1 mM), a cyclooxygenase inhibitor (indomethacin, 10 μM) or an epoxyeicosatrienoic acid inhibitor (miconazole, 10 μM) influenced the enhanced vasodilating effect of adenosine on retinal arteries in the presence of bovine retinal tissue.

In rat carotid artery adenosine elicited no relaxation in the absence of rat or porcine retinal tissue. However, a small relaxation is observed in the presence of rat retinal tissue, but not in the presence of porcine retina.

In conclusion, our findings indicate that adenosine potentiates the relaxing influence of bovine retinal tissue on bovine retinal artery. Neither NO, cyclooxygenase metabolites of epoxyeicosatrienoic acids seem to be involved in this enhanced vasorelaxing response. Our results suggest the involvement of RRF released from bovine retina.

The fact that rat retinal tissue, but not porcine retinal tissue, enhances the relaxing effect of adenosine on rat carotid artery, indicates species differences.