NO synergism with cicaprost in the canine pulmonary artery

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1. The interaction between S-nitroso-N-acetylpenicillamine (SNAP), a nitric oxide donor, and cicaprost, a prostanoid IP receptor agonist, in causing vasodilation of the canine pulmonary artery was studied to determine if the two acted synergistically or additively.

2. SNAP and cicaprost each caused a concentration-dependent relaxation of the artery with an EC$_{50}$ of 170 ± 2 nM and 5.8 ± 0.03 nM respectively.

3. To test synergism, the concentrations of SNAP and cicaprost corresponding to 30 % relaxation were added simultaneously. This caused a net relaxation of 62 ± 10 % which was not significantly different from the 60 % expected additively.

4. The concentrations of SNAP and cicaprost corresponding to 15 % relaxation were added simultaneously. This resulted in a net relaxation of 24 ± 3 % which was not significantly different from the 30 % expected additively.

5. Time-dependence of synergism was assessed by adding SNAP first, then cicaprost (after SNAP's effect had reached a plateau) and vice versa using concentrations expected to give 15 % response. When SNAP was added first, a relaxation of 29 ± 4 % was observed while addition of cicaprost first caused a relaxation of 29 ± 4 %. Neither were significantly different from the 30 % expected additively.