Molecules of Life

FEBS3+ Meeting

organized by the Slovenian Biochemical Society,
Croatian Society of Biochemistry and Molecular Biology,
Hungarian Biochemical Society &
Serbian Biochemical Society

and

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Book of Abstracts

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Ibogaine relaxes rat arteries: the role of endothelium

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Ibogaine is a naturally occurring alkaloid isolated from the bark of the roots of the West African *Tabernanthe iboga* plant. It is well known for its anti-addictive effects. On the other hand, its pharmacology is quite complex, affecting many different neurotransmitter systems simultaneously. Ibogaine binds to several types of receptors: 5-Hydroxytryptamine (5-HT), opioid, nicotinic and N-methyl-D-aspartate (NMDA) receptors, dopaminergic and 5-HT transporters and monoamine oxidase enzyme (MAO). Based on our previous study showing ibogaine effects on ATP liberation (127 pM) from erythrocytes *in vitro*, we wanted to investigate direct pharmacological ibogaine effects on aorta and mesenteric artery and to compare them with effects of ATP. Its effects were tested by isolated organ bath studies using aorta and mesenteric artery rings (with and without endothelium) isolated from Wistar rats. Aortic and mesenteric artery rings were precontracted with phenylephrine (10 μM). Ibogaine (64.4 mM) produced a relaxation in the aortic as well as in mesenteric artery rings, in a similar way. Realaxation effects were followed in time (5, 10, 20, 30, and 60) and it was shown that ibogaine effects are time-dependent. In addition, ibogaine effects are also endothelium dependent since presence of endothelium facilitated relaxation. ATP (127 pM) induced relaxation in the aortic as well as in mesenteric artery rings, and this effect is completely endothelium-dependent. Taken together these findings suggest that ibogaine affect smooth muscles directly. Additionally, relaxation is endothelium dependent (possibly is mediated *via* nitric oxide) and ATP-mediated.