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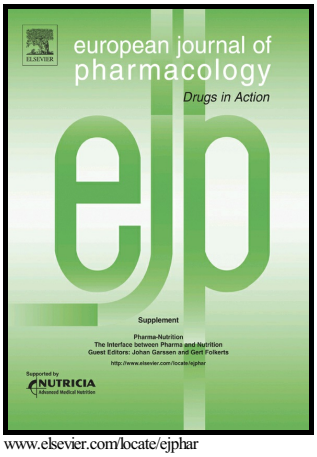

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Vasodilation and hypotension of a novel 3-benzylquinazolin-4(3*H*)-one derivative via the inhibition of calcium flux

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Abstract

A novel 3-benzylquinazolin-4(*3H*)-one derivative Z32, namely 6,7-dimethoxy-3-(3-chloro-4-(4-fluorobenzyloxy)benzyl)quinazolin-4(*3H*)-one was synthesized. The vasorelaxant and antihypertensive effects of Z32 and its underlying mechanisms were investigated. The following methods were used. The isometric tension of artery ring segments was recorded using an *in vitro* myography system. Changes in the calcium influx in mesenteric arteries were surveyed using a real-time confocal microscopy. The arterial pressure of spontaneously hypertensive rats was measured *in vivo* using a non-invasive tail cuff blood pressure system. The results showed that Z32 can relax rat mesenteric arteries pre-constricted by KCl or phenylephrine in a concentration-dependent manner. The vasorelaxant effects were not affected by the removal of the endothelium, blockade of potassium channels by tetraethylammonium chloride, or inhibition of either guanylate cyclase by ODQ, nitric oxide synthase by L-NAME, or cyclooxygenase by indomethacin. In Ca^{2+}-free conditions, Z32 did not affect the constriction evoked by caffeine, however,