EFFECTS OF A CO-MICRONIZED COMPOSITE CONTAINING PALMITOYLETHANOLAMIDE AND POLYDATIN IN AN EXPERIMENTAL MODEL OF BENIGN PROSTATIC HYPERPLASIA

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Palmitoylethanolamide (PEA), a fatty acid amide-signalling molecule has well-known anti-inflammatory and neuroprotective effects. Nevertheless, PEA does not possess the ability to prevent free radical formation. Polydatin (PLD), a biological precursor of resveratrol, has antioxidant activity. A combination of PEA and PLD could, conceivably, have beneficial effects on oxidative stress produced by inflammatory processes. In the present study we investigated the effects of a co-micronized composite containing PEA and PLD (m(PEA/PLD)) in a model of testosterone-induced benign hyperplasia (BPH).

BPH was provoked in rats by daily administration of testosterone propionate (3 mg/kg) for 14 days. This protocol led to alterations in prostate morphology and increased levels of prostaglandin E2 and dihydrotestosterone as well as of 5α-reductase 1 and 5α-reductase 2 expression. Moreover, testosterone induced marked inflammation in terms of an increase in nuclear translocation of nuclear factor-κB p65 and consequently in IκB-α degradation as well as disregulation of inducible nitric oxide synthase, cyclooxygenase-2 expression and manganese superoxide dismutase expression and in the apoptosis pathway.

Our results show, for the first time, that m(PEA/PLD) is capable of decreasing prostate weight and dihydrotestosterone production in BPH-induced rats. These effects were most likely correlated to the anti-inflammatory and apoptotic effects of m(PEA/PLD).

Accordingly, these results support the view that m(PEA/PLD) should be further studied as a potent candidate for the management of BPH.