Effect of long-chain fatty alcohols from orujo olive oil on nitric oxide and eicosanoid generation

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Olive pomace oil (‘orujo’ oil) is an olive oil product suitable for human consumption that is traditionally produced in Spain(1). The non-acylglycerol component of this oil is a good source of interesting minor components, e.g. triterpenes(2), or fatty alcohols, derived from waxy materials. Tetracosanol (C24OH; 30%), hexacosanol (C26OH; 37%) and octacosanol (C28OH; 15%) are the major constituents of the long-chain fatty alcohol (LCFA) fraction isolated from orujo olive oil(3). A similar mixture of long-chain alcohols, termed ‘policosanol’ and purified from waxy materials of different sources such as sugar cane, bees wax, rice bran or spinach, have shown many beneficial physiological activities(4,5). The present study focused on the effect of LCFA isolated from orujo olive oil on NO, PGE₂ and TNF-α generation by A-23187-stimulated rat peritoneal neutrophils (PMN). Nitrite (as an index of NO generation) levels were significantly decreased by LCFA at the highest dose assayed (100 µg/ml; Fig. 1). LCFA significantly reduced TXA₂ production in rat PMN stimulated with A-23187 (Fig. 3).

These results showed that LCFA isolated from ‘orujo’ oil has a protective effect on some mediators implicated in the development of inflammatory damage in these experimental models and suggest its potential value as a functional component of the olive pomace oil.

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