



Tipo	Periódico
Título	Kinetic study on the inhibition of xanthine oxidase by acylated derivatives of flavonoids synthesised enzymatically
Autores	Maria Elisa Melo Branco de Araújo, Yollanda Edwirges Moreira Franco, Thiago Grando Alberto, Marcia Cristina Fernandes Messias, Camila Wielewski Leme, Frankland Sawaya, Patrícia de Oliveira Carvalho
Autor (es) USF	Maria Elisa Melo Branco de Araújo, Yollanda Edwirges Moreira Franco, Thiago Grando Alberto, Marcia Cristina Fernandes Messias, Patrícia de Oliveira Carvalho
Autores Internacionais	
Programa/Curso (s)	Programa de Pós-Graduação Stricto Sensu em Ciências da Saúde
DOI	10.1080/14756366.2017.1347165
Assunto (palavras chaves)	Acylation; lipase; flavonoids; xanthine oxidase
Idioma	Inglês
Fonte	Título do periódico: Journal Of Enzyme Inhibition And Medicinal Chemistry ISSN: 1475-6374 Volume/Número/Paginação/Ano: v. 32, p. 978-985, 2017
Data da publicação	18 Jul 2017
Formato da produção	Digital https://doi.org/10.1080/14756366.2017.1347165
Resumo	Studies have reported that flavonoids inhibit xanthine oxidase (XO) activity; however, poor solubility and stability in lipophilic media limit their bioavailability and applications. This study evaluated the kinetic parameters of XO inhibition and partition coefficients of flavonoid esters biosynthesised from hesperidin, naringin, and rutin <i>via</i> enzymatic acylation with hexanoic, octanoic, decanoic, lauric, and oleic acids catalysed by <i>Candida antarctica</i> lipase B (CALB). Quantitative determination by ultra-high performance liquid chromatography–mass spectrometry (UHPLC–MS) showed higher conversion yields (%) for naringin and rutin esters using acyl donors with 8C and 10C. Rutin decanoate had higher partition coefficients (0.95), and naringin octanoate and naringin decanoate showed greater inhibitory effects on XO (IC ₅₀ of 110.35 and 117.51 μM, respectively). Kinetic analysis showed significant differences ($p < .05$) between the flavonoids before and after acylation regarding K_m values, whereas the values for V_{max} were the same, implying the competitive nature of XO inhibition.
Fomento	