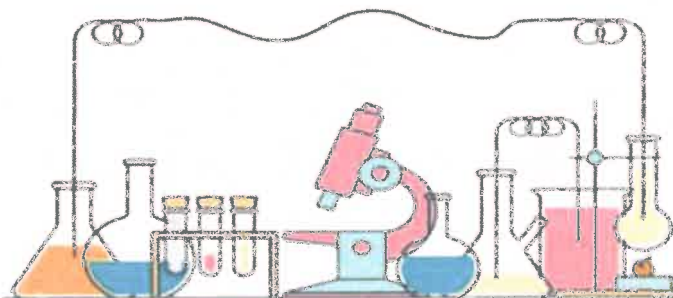




Faculdade  
de Ciências  
da Universidade  
do Minho



# 3<sup>rd</sup> Symposium on Medicinal Chemistry of University of Minho

May 26<sup>th</sup>, 2017

School of Science, Chemistry Department

University of Minho, Campus of Gualtar

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## The role of chamomile phenolic compounds in the development of dairy functional foods

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There is a growing interest for healthier foods either by consumers or by industrial sectors [1]. Bioactive phytochemicals, such as phenolic compounds (PC), have been used in the preparation of nutraceuticals and functional foods [2]. In the present work, the antioxidant and antimicrobial properties of plant extracts rich in PC were evaluated. *Matricaria recutita* L. (chamomile) extracts were prepared following a decoction procedure and displayed 2,2-diphenyl-1-picrylhydrazyl scavenging activity ( $EC_{50} = 335 \pm 3 \mu\text{g/mL}$ ), reducing power ( $238 \pm 38 \mu\text{g/mL}$ ),  $\beta$ -carotene bleaching inhibition ( $297 \pm 27 \mu\text{g/mL}$ ) and lipid peroxidation inhibition ( $72 \pm 2 \mu\text{g/mL}$ ). The bacteria *Staphylococcus aureus* (MIC=35  $\mu\text{g/mL}$ ), *Bacillus cereus* (MIC=100  $\mu\text{g/mL}$ ) and *Salmonella typhimurium* (MIC=100  $\mu\text{g/mL}$ ), as also the fungi *Penicillium funiculosum* (MIC=200  $\mu\text{g/mL}$ ), *Aspergillus versicolor* (MIC=400  $\mu\text{g/mL}$ ) and *Trichoderma viride* (MIC=400  $\mu\text{g/mL}$ ), were susceptible to the action of chamomile phenolic extracts. Their chemical characterization, performed by HPLC-DAD-ESI/MS, revealed the presence of nine flavonoids (mainly luteolin-O-glucuronide) and ten phenolic acids (mainly di-caffeoyl-2,7-anhydro-3-deoxy-2-octolopyranosonic acid). Due to the observed bioactive properties, chamomile phenolic extracts were used to functionalize yogurts. This functionalization did not cause significant changes in the yoghurt pH and nutritional value, but improved antioxidant properties when compared with control samples. The obtained results support the use of PC extracts in the development of novel dairy foods.

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[2] Carocho, M. et al., *Trends Food Sci. Technol.*, **2015**, *45*, 284-295.