

Anti-hypertensive Activity of Horse Mackerel Pulverized with Three Different Extracts from Marine Origin

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Introduction

Hypertension is a serious risk factor and the most prevalent trigger to fatal cardiovascular diseases such as stroke and myocardial infarction. The marine environment is a unique source of molecules with biological activity such as antioxidant, anti-coagulant and anti-hypertensive activities. In this study, the anti-hypertensive activity of horse mackerel fillets (HMF) pulverized with each of the following marine extracts (derived from enzymatic hydrolysis) were determined: microalgae (*Tetraselmis sp.* incubated with subtilisin and cellulase), Mussel_Sub (*Mytilus galloprovincialis* minced and incubated with subtilisin protease) and Mussel_Pro+Alc (*Mytilus galloprovincialis* boiled and incubated with Protamex¹ and Alcalase).

Methods



Figure 1. Horse Mackerel Fillets

Anti-hypertensive Activity
Angiotensin I-converting enzyme (ACE) inhibitory activity method

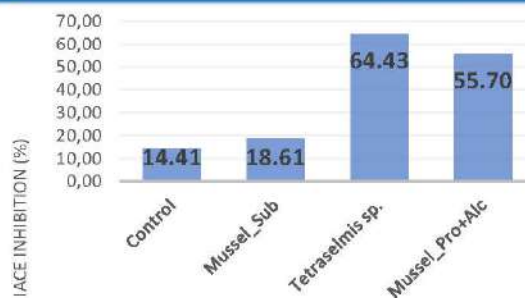
Data are presented in Table.1 as average \pm standard deviation of two replicates.

Results

Table 1. Anti-hypertensive activity of HMF sprayed with Extracts from Marine Origin.

Sample	ACE inhibitory activity (%)*
Control	14.4 \pm 0.8 ^a
Mussel_Sub	18.6 \pm 0.6 ^a
Microalgae	64.4 \pm 4.3 ^b
Mussel_Pro+Alc	55.7 \pm 3.7 ^{a,b}

*different letters indicate significant differences ($p < 0.05$) between samples



Graphic 1. Anti-hypertensive activity of HMG sprayed with Extracts from Marine Origin.

Conclusions

Horse mackerel fillet showed by itself an interesting anti-hypertensive profile. Notwithstanding, the tested marine-derived extracts effectively increased its biological potential (up to four-fold), with the best anti-hypertensive profile being achieved with microalgae and Mussel_Pro+Alc extracts. These extracts have an enormous potential to be used in the development of innovative food products that emphasize functionality, convenience, nutrition and health – goal of the project VALORMAR (POCI-024517-FEDER)(PPS1).

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