

# COLLAGEN-BASED BIOACTIVE HYDROLYSATES PRODUCTION FROM BLUE SHARK SKIN

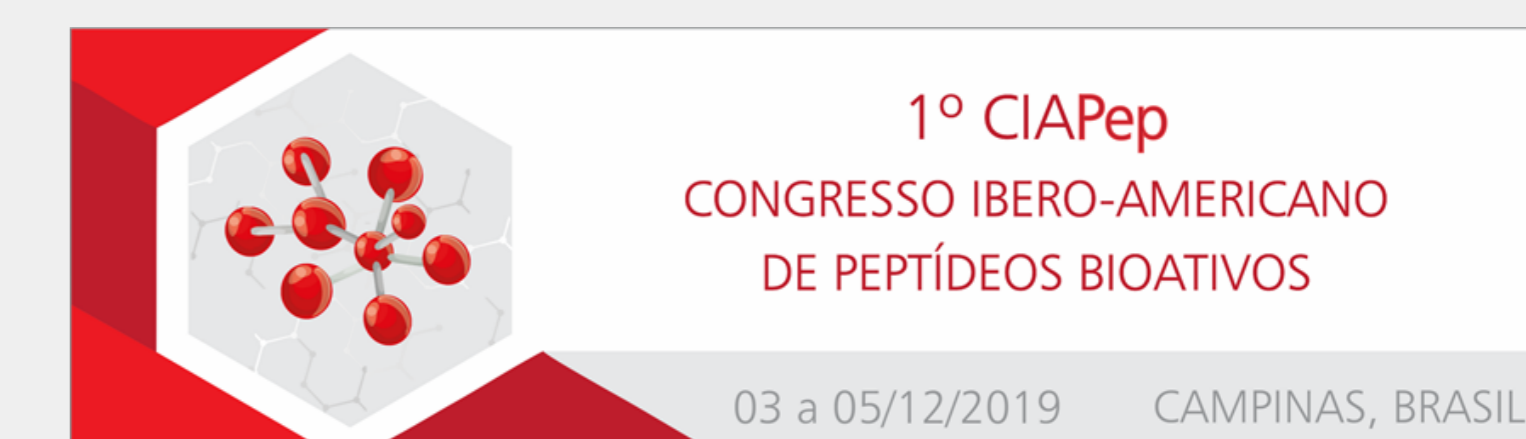
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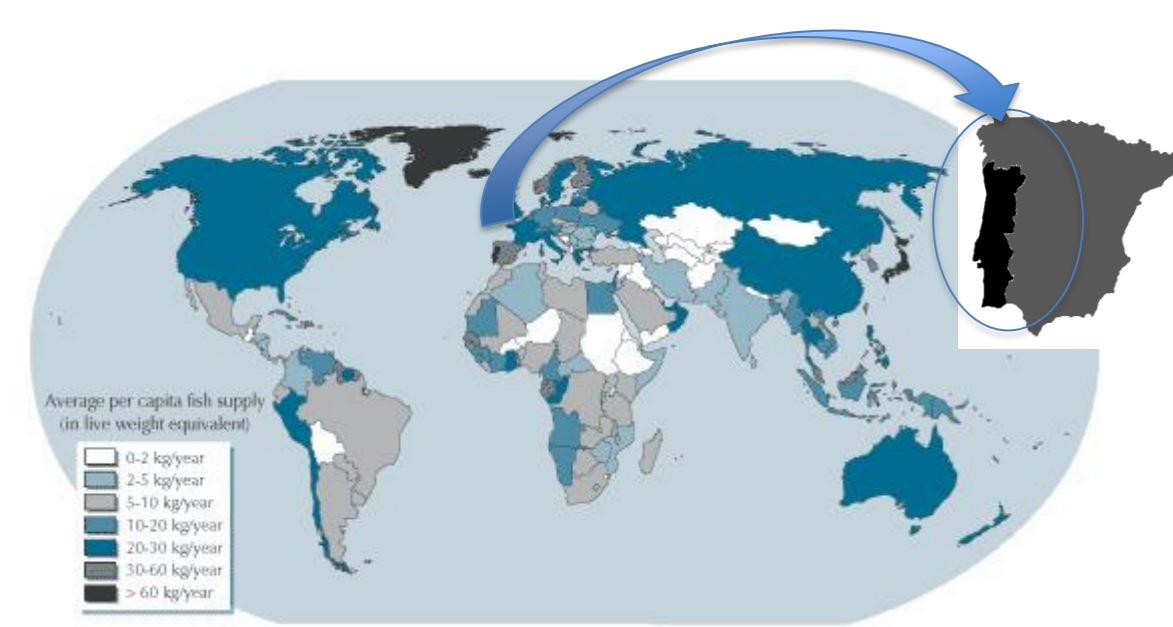
PORTO

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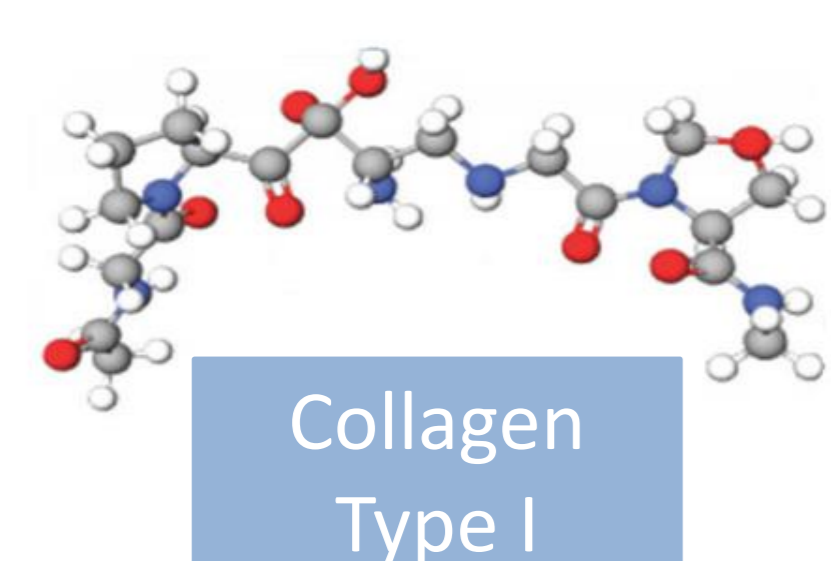


## Introduction

Fish consumption in the world



Blue shark skin: an abundant Portuguese by-product from processing industry rich in collagen.

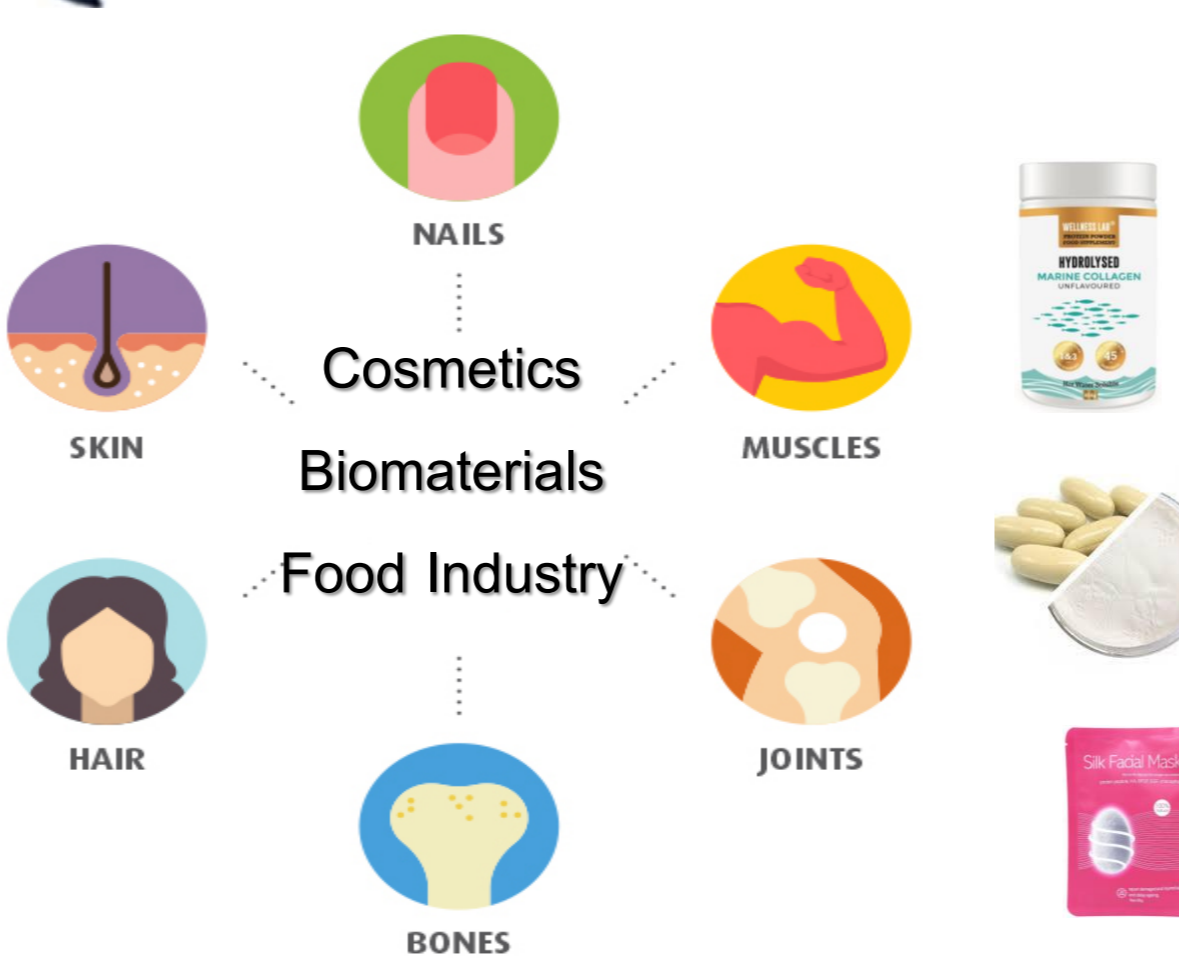


Hydrolysis



Low molecular weight peptides

Added value APPLICATION

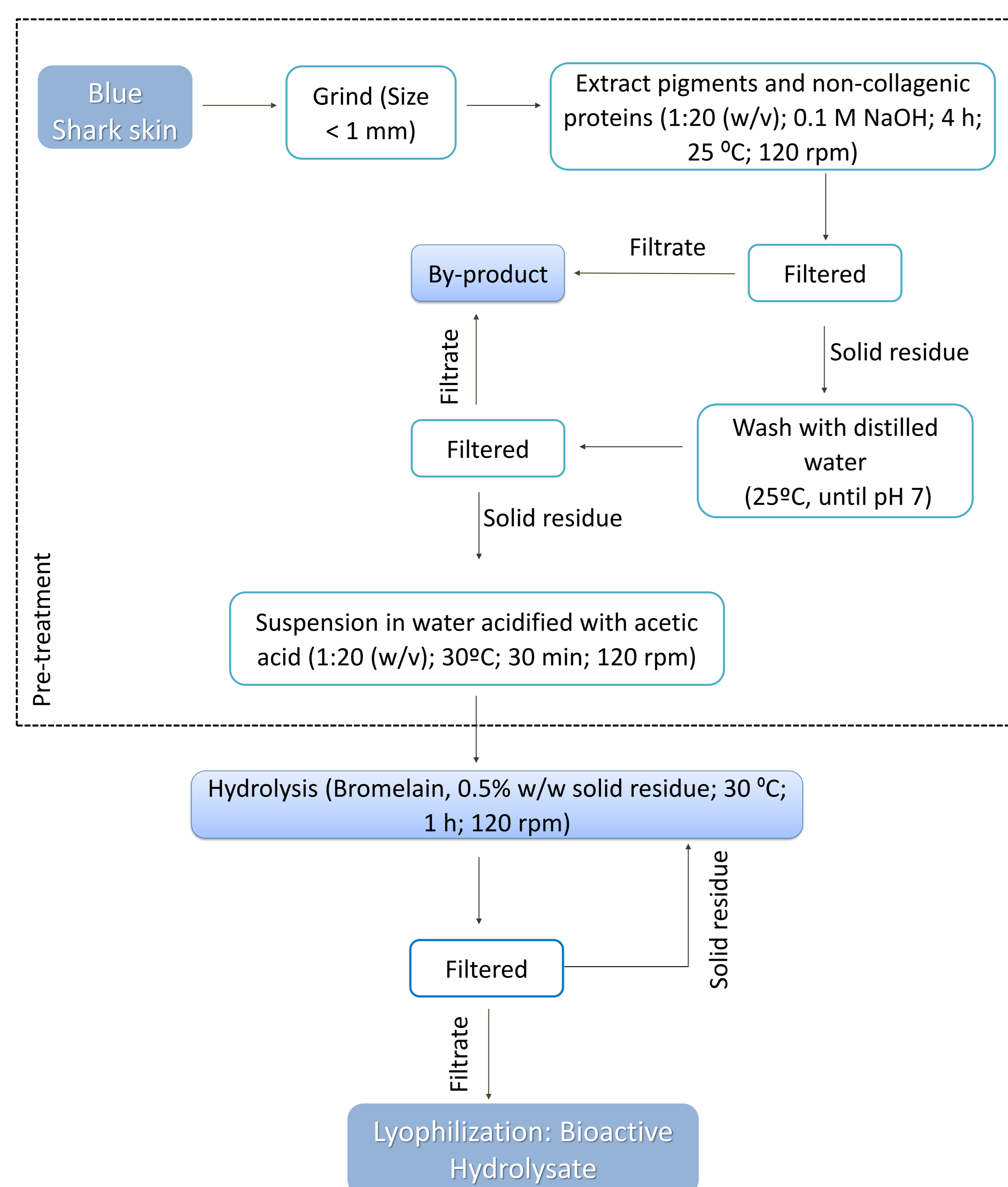


## Objectives

To obtain a collagen hydrolysate from Blue Shark skin (BSS) with bromelain (BR), a plant enzyme.

To investigate the characteristics of BSS protein hydrolysate in terms of Oxygen Radical Absorbance Capacity (ORAC) assay as well as the Angiotensin Converting Enzyme (ACE) inhibition activity of the BSS hydrolysate.

## Methods and Results



SDS-PAGE

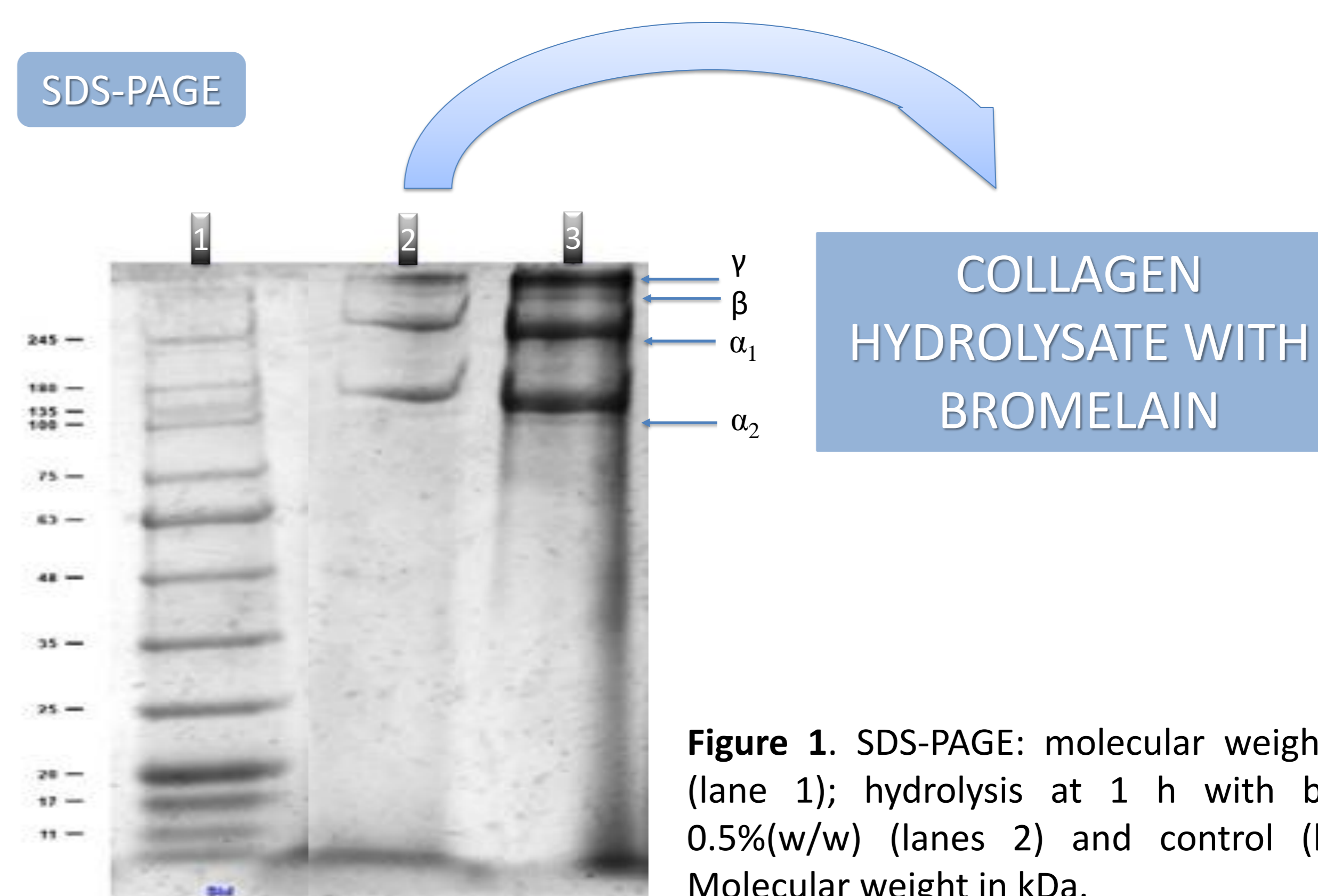


Figure 1. SDS-PAGE: molecular weight marker (lane 1); hydrolysis at 1 h with bromelain 0.5%(w/w) (lanes 2) and control (lanes 3). Molecular weight in kDa.

ANTIOXIDANT ACTIVITY AND ACE INHIBITION ACTIVITY

$\mu\text{mol Trolox Equivalent/mg protein}$	$\text{IC}_{50} \text{ ug protein/mL}$
4.077	14.3



## Conclusions

This is a sustainable process with less time and energy consuming and uses an alternative and abundant byproduct as raw material. In addition, bromelain allows hydrolysates with important antioxidant activity value (ORAC, 4.077  $\mu\text{mol Trolox Equivalent/mg protein}$ ) and antihypertensive activity value (inhibition of ACE,  $\text{IC}_{50}$  of 14.3  $\mu\text{g protein/mL}$ ). These findings are important in providing useful information regarding BSS protein hydrolysate that can be useful for various applications particularly for food, healthcare and pharmaceutical products.

## Acknowledgements

The authors would like to acknowledge "MultiBiorefinery" Project (POCI-01-0145-FEDER-016403) for the funding of the work and the financial support provided by FCT to CBQF/ESB-UCP (UID/Multi/50016/2013).