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**TAL 797 – Seminário**

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## **USE OF ULTRASOUND ON THE GENERATION OF PEPTIDES WITH BIOLOGICAL PROPERTIES**

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Bioactive peptides are small protein fragments extracted from food proteins that show biological and functional activities. Recent studies have shown that these peptides may bind to the receptors of cells involved in specific metabolic processes to carry out important biological functions. Depending on the sequence of amino acids, these peptides can exert antioxidant, antihypertensive, immunomodulatory, anti-diabetic activities, among others. For this reason, studies related to the obtaining and applicability of these nutraceutical ingredients in the food industry are growing. Currently, peptides are obtained mainly by enzymatic hydrolysis, which has high specificity and no toxicity. However, this process has the disadvantages of high enzyme cost and low yield, which favors the search for alternatives to reduce these limitations. In this context, the use of emerging technologies, such as high hydrostatic pressure, ultrasound, pulsed electric field and microwave may favor the production of these peptides. Ultrasound (US) is considered a “green” technology and has been used in the improvement of enzyme performance. This improvement can occur in the pre-treatment of the substrate or enzyme, as well as in the enzymatic reaction assisted by US. Due to the effects generated by technology such as the cavitation mechanism, the US can promote structural changes in proteins making them more accessible to hydrolysis, or even promote enzymatic activation and stabilization. In addition, the ultrasound-assisted reaction can be accelerated due to the increase in mass transfer during the process. Therefore, the use of ultrasound in the generation of bioactive peptides can be an advantageous strategy. Since this technology considered economically viable, innovative and sustainable can increase the production of these compounds of interest.

## References

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