

## **Comparing the effect of heat on tropomyosin isoforms patterns from water buffalo and wild boar meat by two-dimensional gel electrophoresis**

### **ABSTRACT**

Tropomyosin is one of the most abundant proteins in meat; however, very little is known about it due to the lack of scientific literature. In this study, the spot volume of tropomyosin (TPM) isoforms, TPM2 and TPM1, in meat from water buffalo and wild boar subjected to various cook treatments were compared. We hypothesized that primary structures of the tropomyosin isoforms from both species would remain stable despite the application of heat. Proteins extracted from the treated meats were analyzed using two-dimensional gel electrophoresis and mass spectrometry. A Kruskal-Wallis test showed that there were no significant differences in protein spot volumes for all treatments; however, a significant difference was observed between species. Changes in the amino acid sequence of TPM1 were observed between the two species, indicating that the isoforms could be used as thermostable proteins or peptide markers for species identification because of their resistance to high temperatures.

**Keyword:** Meat; Tropomyosin isoforms; Spot volume; Proteomic approaches