



# Hamburger Quality Assessment by Detect Unauthorized Connective Tissue with Histological and Microscopic Methods

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## Abstract

Increasing in the word population and needs to quantitative and qualitative food supply caused to highlights the dairy processed food as hamburgers. In the other hands, due to the weakness of chemical and microbial methods, histological and microscopic methods have recently become an important place in the quality assessment of food. This study was performed to detect the connective tissues as an unauthorized tissue from skeletal muscle tissue as an authorized tissue in the hamburger with emphasis on histological and staining methods. 20 hamburger samples were collected from 14 factories producing meat products, and then each sample was separated to 3 tissue samples and cut into 6 sections. Eventually 240 tissue slides were prepared. The samples were studied by general staining of Hematoxylin-Eosin and special staining verhoeff Van Gieson, Trichrome Masson and Alcian-blue pas by optical microscopy. Connective tissue mostly consists of collagen and usually connects to bone, blood vessels, and skeletal muscles. Due to their strong structure, connective tissue were less susceptible to morphological changes during the hamburger preparation process and were easily detectable by general staining of hematoxylin-eosin. However, the connective tissue material was observed in different colorings with different staining. This tissue was observed pink to red in hematoxylin-eosin staining, green in trichrome mason and dark red in verhoeff Van Gieson staining. This tissue coagulates due to heat during the hamburger process. Therefore, part of the coagulated tissue receives red colors during hematoxylin-eosin and verhoeff Van Gieson and green colors during trichrome mason staining. Due to similar color in detecting connective and muscle tissues when use the general staining of hematoxylineosin, specific staining could help to distinguish and subtract cartilage in samples. It seems that specific staining could be considered as a complete reference in the detection of unauthorized connective tissue in meat products.

## Biography

Parisa alipour nesheli completed her Doctor of Veterinary Medicine (DVM) at the age of 25 years from Ferdowsi University – Mashhad - Iran. She is technical assistant and scientific representative of Amine Gostar Inc. (Pharmaceutical & Feed Additives in Animal Husbandry) – Tehran – Iran.

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