Republic of Iraq Ministry of Higher Education and Scientific Research Al Muthanna University College of Science Department of Biology



Morphological traits and Genetic Markers in External Ear as potential forensic Tool for Identification in Iraqi Population

A thesis submitted to the Council of College of Science /Al- Muthanna University as partial Fulfillment of the Requirements for the Degree of Master of Science in Biology

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2022 A.D

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Abstract

The outer ear is an emerging biometric that has drawn the attention of the research community for more than a decade. Empirical studies show that the shape of the outer ear is unique and that it remains consistent throughout a person's life.

The earlobes, like the eyes, nose, and lips of humans, have unique characteristics. Although human ears appear to be similar, there are small structural changes that distinguish each ear.

In this study, we evaluated six pinna traits in 143 people using facial photographs: (ear shape, lobe attachment, and helix rolling). This study shows significant differences at (P>0.050) in the morphological features of the external ear of the sampled subjects in both sexes. The triangle-shaped ear was prevalent in females and males had an oval shape, In helix females had a higher percentage of concave shapes than males, who had a higher percentage of wide shapes. Also,the study showed significant differences at (P>0.050) in shape of earlobe, thickness of earlobe and shape of tragus between female and male. In the other hand, the males are more significant than females in attachment. The SNPs, in rs17023457, a very significant with external , helix , lobe attachment, lobe thickness respectively but not significant were observed with shape of earlobe and targus, in rs3827760, rs2080401, has the strongest connection with all attributes, and conditioning on this SNPs eliminates the signal of association at other SNPs in the region.