

linked to proliferation and increased angiogenesis in endometriotic tissue [1]. **Conclusões:** Despite the existence of numerous biomarkers for the diagnosis of endometriosis, most of them are specific to advanced

stages of the disease. Thus, it is essential to intensively search for biomarkers expressed in early stages of the disease, allowing for efficient, non-invasive new diagnosis tools.

Palavras-chave: inflammation; matrix metalloproteinases; CA125 biomarker; angiogenesis; aryl hydrocarbon receptor

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POSTER 54

Application of nanoparticles in fingerprint development

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Doi: <https://doi.org/10.51126/revsalus.v4iSup.321>

Resumo

Introduction: When the surface of an object is touched by a finger, endocrine glands such as sweat and oily substances can be transferred and deposited on the surface, resulting in the formation of a fingerprint. Depending on the surface, it is not always possible to observe the fingerprint with the naked eye, and physicochemical methods are used to reveal it. [1] Thus, in this work we intend to apply the method of single metal deposition combined with lipid nanoparticles to reveal and allow to improve the resolution of latent fingerprints on porous and non-porous matrices. [2] **Objectives:** To produce and validate new fingerprint development methodology, to confirm the effectiveness of this method on surfaces of forensic interest, and to validate the methodology by analysis of the characteristic points on fingerprints. **Material and Methods:** Different matrices of forensic interest will be studied, namely fabrics

such as leather assisting in the discovery of fingerprints on automobile steering wheels and glass. The main method used in this work will be single metal deposition combined with lipid nanoparticles. [2,3] **Results:** It is expected to obtain gold nanoparticles with sizes between 10 and 30 nanometers and this size will be confirmed by UV-visible spectrum analysis, furthermore, the matrices will be developed using the single metal deposition technique as well as the single metal deposition technique combined with lipid nanoparticles to understand the differences found in both development strategies. **Conclusions:** We anticipate that the technique of single metal deposition combined with lipid nanoparticles will provide visualization of a greater number of characteristic spots after development and thus confirm the effectiveness of this technique in aiding investigations in future practical cases.

Keywords: leather; latent fingerprints; lipid nanoparticles; gold nanoparticles; glass

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