ALDH1, and SOX2 by immunocytochemistry in a series of malignant ascites samples (n=15) obtained from ovarian cancer patients (n=11) before (n=7) and after (n=8) treatment regiments. **Results:** All the malignant ascites (15 samples) present high expression levels (76 – 100% of tumor cells) of MUC16 and MSLN was expressed at high levels (51 – 75% and 76 – 100% of tumor cells in 2/15 and 13/15 samples, respectively), both at time of diagnosis and after chemotherapy treatment. There was no clear association between MSLN and/or MUC16 with diagnosis and treatment since all cases were positive for MSLN and MUC16. In most cases, ALDH1 was negative (11/15 samples), low/moderate expressed (about 11 – 25% or 25 – 50% of tumor cells, respectively, in 3/15 samples), or high expressed (76 – 100% of tumor cells in 1/15 samples). SOX2 was, in most cases, negative (13/15 samples). However, in two samples obtained after chemotherapy (2/7 samples) SOX2 was low/moderate expressed (about 11 – 25% or 25 – 50% of tumor cells, respectively).
Conclusions: In summary, the expression of MUC16 and MSLN is high in all the malignant ascites samples, and SOX2 and ALDH1 were mostly negative or low/moderate expressed. We did not find a correlation with different treatment regimens.

Keywords: biomarkers; cancer stem cells; immunocytochemistry; malignant ascites; ovarian cancer.

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POSTER 53

Biomarkers in endometriosis: from diagnosis to treatment

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Resumo

Introdução: Endometriosis is a chronic, inflammatory disease characterised by the presence of endometrial-like tissue outside the uterus [1]. Among the main symptoms are abdominal pain, dyspareunia, dysuria, painful defecation, and infertility [1]. Endometriosis is divided in four stages: minimal, mild, moderate and sever stages. Diagnosis is usually late and done by histological analysis, ultrasounds, and/or quantification of the biomarker CA125. Treatment consists of hormone therapy, analgesics, and laparoscopy. Often, in late diagnosed patients, organ removal beyond the uterus is also necessary [2]. To provide a less invasive treatment, an early diagnosis is necessary, this urging the discovery of promising biomarkers with high expression and specificity for the different stages of the disease [3]. **Objetivos:** Herein, we intended to provide a detailed mapping of the endometriosis biomarkers described in the literature and discuss the most promising ones for the early diagnosis of the disease. **Métodos:** Review papers published in PubMed between 2015 and 2022, were revised and relevant information compiled. **Resultados:** The journey to endometriosis diagnosis is long and fraught with barriers and misdiagnoses. Although being the most described, CA125 is an unspecific and insensitive biomarker for endometriosis [3]. The aryl hydrocarbon receptor (AhR), which is involved in regulation of the endometriotic inflammatory process, is appointed as a promising biomarker for the prognosis of the disease and as a therapeutic target [4]. Other biomarkers of interest include P450/aromatase in menstrual fluid; IL-10, which has a high tissue expression, although being restricted locally [3]; MAPK/ERK, whose high expression is correlated with endometriotic lesions [5]; MMP-9, as increased levels are observed in patients with advanced endometriosis stages; MIF for ectopic endometrium [2]; and VEGF-C,

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: inflamation; matrix metalloproteinases; CA125 biomarker; angiogenesis; aryl hydrocarbon receptor

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POSTER 54

Application of nanoparticles in fingerprint development

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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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