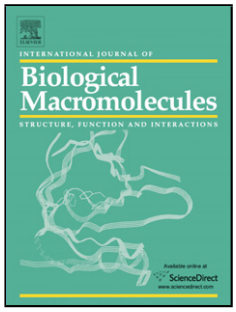

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PII: S0141-8130(17)33737-6
DOI: https://doi.org/10.1016/j.ijbiomac.2017.12.014
Reference: BIOMAC 8675

To appear in: *International Journal of Biological Macromolecules*

Received date: 3-10-2017
Revised date: 20-11-2017
Accepted date: 4-12-2017

Please cite this article as: Md Tajmul, Farhat Parween, Lata Singh, Sandeep R.Mathur, J.B Sharma, Sunesh Kumar, D.N Sharma, Savita Yadav, Identification and validation of salivary proteomic signatures for non-invasive detection of ovarian cancer, International Journal of Biological Macromolecules https://doi.org/10.1016/j.ijbiomac.2017.12.014

Identification and validation of salivary proteomic signatures for non-invasive detection of ovarian cancer

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Abstract

Ovarian cancer (OC) is one of the most lethal cancers among all gynecological malignancies. An effective and non-invasive screening approach is needed urgently to reduce high mortality rate. The purpose of this study was to identify the salivary protein signatures (SPS) for non-invasive detection of ovarian cancer. Differentially expressed SPS were identified by fluorescence-based 2D-DIGE coupled with MALDI/TOF-MS. The expression levels of three differential proteins (Lipocalin-2, indoleamine-2, 3-dioxygenase1 (IDO1) and S100A8) were validated using western blotting and ELISA. Immunohistochemistry and qRT-PCR were performed in an independent cohort of ovarian tumor tissues. 25 over expressed and 19 under expressed ($p < 0.05$) proteins between healthy controls and cancer patients were identified. Lipocalin-2, IDO1 and S100A8 were selected for initial verification and successfully verified by immunoassay. Diagnostic potential of the candidate biomarkers was evaluated by ROC analysis. The selected biomarkers were further validated by immunohistochemistry in an independent cohort of ovarian tissues.