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## **Circulating miRNA landscape identifies miR-1246 as promising diagnostic biomarker in high-grade serous ovarian carcinoma**

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**H**igh-grade serous ovarian carcinoma (HGSOC) is the most lethal gynaecologic neoplasm, with five-year survival rate below 30%. Early disease detection is of utmost importance to improve HGSOC cure rate. Sera from 168 HGSOC patients and 65 healthy controls were gathered together from two independent collections and stratified into a training set, for miRNA marker identification, and a validation set, for data validation. An innovative statistical approach for microarray data normalization was developed to identify differentially expressed miRNAs. Signature validation in both the training and validation sets was performed by quantitative Real Time PCR (RT-qPCR). In both the training and validation sets, miR-1246, miR-595 and miR-2278 emerged significantly over expressed in the sera of HGSOC patients compared to healthy controls. Receiver Operating Characteristic curve analysis revealed miR-1246 as the best diagnostic biomarker, with a sensitivity of 87%, a specificity of 77% and an accuracy of 84%. This study is the first step in the identification of circulating miRNAs with diagnostic relevance for HGSOC. According to its specificity and sensitivity, circulating miR-1246 levels are worthy to be further investigated as potential diagnostic biomarker for HGSOC.