

## **A SINGLE-TUBE 10-MIRNAS ASSAY FOR IDENTIFYING FIVE HUMAN BODY FLUIDS BY CAPILLARY ELECTROPHORESIS**

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Body fluids (or their stains) identification plays essential role in reconstructing the crime scene or providing evidence in court. Traditional body fluid identification makes use of biochemical or spectroscopic measurement, having various limitations on the items of time consumption, intensive labor, low sensitivity and doubtful specificity. In this paper, we successfully established a multiplex RT-PCR system which can identify 10 specific miRNAs of five body fluids (peripheral blood, semen, menstrual blood, saliva, vaginal secretions) identification. The assay shows a great potential to distinguish five body fluids by 10 specific miRNAs detected by capillary electrophoresis, and provides a new method for body fluids identification in crime scene. The sensitivity test showed that 1ng or more miRNAs would be enough to conduct this assay. Different kinds of body fluids showed different expression pattern between this 10 specific miRNAs. miR451, miR144-3P, miR144-5P were highly expressed in peripheral blood, miR888, miR144-3P, 他miR 891a were highly expressed in semens, miR214, miR451, miR144-3P, miR205-5P, miR203-3p were highly expressed in menstrual blood, miR451, miR144-3P, miR205-5P, miR203-3p were highly expressed in saliva, miR144-3P, miR203-3p, miR205-5P were highly expressed in vaginal secretions, so the five kinds of body fluids can be distinguished well by this assay.

**KEY WORDS:** miRNAs; Body fluid identification; Reverse transcriptase endpoint method PCR; Capillary electrophoresis