MicroRNA in biofluids – Robust biomarkers for disease

Anni R. Thomsen, Jørg Krummheuer, Thorarinn Blondal, Ditte Andreassen, Maria W. Teilm, Niels Tostrup, Nils Brüner, Jan Stenvang, Claus L. Andersen, Hans J. Nielsen, James Catto and Peter Mournitz.

1 Exiqon A/S, Vedløse, Denmark. 2 Faculty of Health and Medical Sciences, University of Copenhagen. 3 MIND, Aarhus University Hospital. 4 Department of Surgical Oncology, Herlev University Hospital. 5 Shefﬁeld University Medical School.

Introduction
Clustering of nucleo-cytoplasmic microRNAs is a unique class of biomarkers with the great advantage of being minimally invasive in a diagnostic use. These microRNAs originate from various circulating pools and have been widely used for diagnostics of various cancer types and various conditions. MicroRNAs are not only released by exosomes in various prostate cancers and other tumor microRNAs have been shown to

Exosomes can be easily isolated from various biofluids using the MiRCURY Exosome Isolation Kit. The particles contained in the sample are visualized by light scatter when illuminated by

coefficients $R^2 > 0.99$. The Exosome Isolation Kit greatly improves detection of microRNAs from plasma. By moving the detection to a higher abundance microRNAs can improve detection of microRNAs

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abundant plasma samples

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microRNA profiles from serum/plasma derived exosomes

• Exosomes are secreted in the blood stream by a wide range of nucleo-cytoplasmic cells and pathological conditions.

• When released, single exosomes can be detected by capillary electrophoresis. MicroRNAs are more efficiently and sensitively detected by capillary electrophoresis.

• Exosomes are isolated and analyzed by capillary electrophoresis. The isolated exosomes are visualized by light scatter when illuminated by

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Improved detection of microRNA in low abundant plasma samples

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MicroRNA detection in prostate cancer

Prostate cancer is one of the most common cancers in the Western World. Most newly diagnosed cancers are clinical stage. The early detection of prostate cancer is important in order to improve patient survival. However, a lack of adequate non-invasive diagnostic tools is a major issue.

B) PCA plot of urine samples separated by microRNA expression. Samples are clustered by PCA on microRNA expression. Samples are separated by PCA on microRNA expression. Samples are separated by PCA on microRNA expression. Samples are separated by PCA on microRNA expression.

Concluding remarks
The advent of biofluid-based prostate cancer diagnostics is in an early stage. However, promising technologies are currently emerging.

Figure 4. PCA plot of prostate cancer associated miRNA levels in urine B. ROC curve for sensitivity and specificity prostate cancer versus other urine samples. The ROC analysis was performed using the method described in [3].