Urine Proteomic Pattern Analysis for Early Hepatitis and Hepatitis-Related Liver Cancer Detection

M. Abdalla1,2, and Y. Haj-Ahmad1,2,3
1Brock University, St. Catharines, ON, CANADA, 2Norgen Biotek Corp., Thorold, ON, CANADA

Abstract
The early detection of hepatitis and Hepatitis-related liver cancer is critical for both public health and individual patients. Although several methods for the early detection of hepatitis and hepatitis-related liver cancer exist, such as serological tests, clinical symptoms, and histopathological examination of liver tissue, early diagnosis remains challenging due to the asymptomatic nature of these diseases.

Methods
1. Urine samples were collected from patients with Hepatitis B and Hepatitis C for validation in the Norgen Biotek Lab in Ontario, Canada. A total of 35 urine samples were collected from patients with Hepatitis B and Hepatitis C.
2. Proteins were extracted from the urine samples using the Protein Prep Kit. The proteins were then separated by SDS-PAGE and stained with Coomassie Blue.
3. Proteins were identified by mass spectrometry using LC-MS/MS.

Results
A. Urine Proteome from HCV+ vs HCV- Individuals
B. Urine Proteome from HBV+ vs HBV- Individuals
C. Urine Proteome from HCC+ vs HCC- Individuals

Discussion
1. Our findings suggest that some proteins are consistently present across all individuals.
2. Comparing the proteome profile of different groups and subgroups reveals the presence of specific proteins and peptides in each group that can potentially be used as biomarkers.

Conclusions
1. Urine proteomics can provide valuable information for early detection.
2. Further studies are needed to confirm the clinical significance of identified proteins.

Acknowledgements
This research was supported by the Ontario Cancer Research Foundation and the Canadian Institutes of Health Research.