
Background

Next Generation Biomarker Technology for Early Cancer Detection **Atlantic Cancer Research Institute**

The Atlantic Cancer Research Institute (ACRI) is a private, not-for-profit research organization located in Moncton, New Brunswick. A successful Round I AIF project by ACRI has resulted in two patent applications for new genetic biomarker panels for colon and prostate cancer. These biomarkers provided the foundation for a Round IV AIF project nearing completion by ACRI for developing protein biomarker tests to determine the presence of cancer cells in blood, urine and stool.

The capability to distinguish between high and low risk breast cancer patients is of considerable medical and commercial importance. Both earlier detection and improved tumour classification would allow for a more personalized approach to treatment with significant improvement in patient care. Such tests should be sensitive and specific enough to identify early stage breast cancer, providing sufficient information to recommend specific therapy.

With this new AIF project, ACRI will advance recent discoveries by exploring novel reagents and methods for the capture of proteins on Microvesicles (MVs), which are released by all cancers into the blood and body. MVs provide important information such as a cancer's aggressiveness, as well as the appropriateness and timing of treatment.

The project's objective is to test and analyze MVs captured from blood of stage 3 and 4 breast cancer patients for comparison with traditional laboratory methods. ACRI hopes to develop new reagents and non-invasive tests to identify markers that classify different stages of cancer and help determine whether a patient should be included or excluded from follow-up treatments such as chemotherapy or surgery.

This project, with total estimated costs of \$5.7 million, will receive approximately \$2.8 million from the Atlantic Innovation Fund over a four-year period.

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