



BULLETIN



CANADIAN GENETIC DISEASES NETWORK

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CANADIAN SCIENTISTS ARE MEMBERS OF TEAM DISCOVERING SECOND GENE FOR HEREDITARY BREAST CANCER

An international team of researchers including Dr. Steven Narod, of Women's College Hospital at the University of Toronto and Dr. Patricia Tonin of the Division of Medical Genetics of the Department of Medicine at McGill University, have discovered a second gene for hereditary breast cancer, BRCA2. Both investigators were part of the team which discovered the breast cancer susceptibility BRCA1 gene in September 1994.

Dr. Narod is holder of the Canadian Breast Cancer Foundation (Ontario Chapter) Chair in Breast Cancer Research and a member of the Canadian Genetic Diseases Network. Dr. Tonin is an Assistant Professor of Medicine at McGill and a Cancer Research Society/Medical Research Council of Canada Scholar.

The BRCA2 discovery was led by British scientists who worked collaboratively with researchers in Canada, Iceland, Holland, France, and the United States. In the findings of the research team, to be published in the December 21 edition of the British journal *Nature*, BRCA2 mutations were found in six families with multiple cases of breast cancer. Four of these families were followed by Dr. Narod and Dr. Tonin at McGill University.

"As with BRCA1", said Dr. Narod, "we expect that women who inherit the BRCA2 gene may have up to an 85% chance of developing breast cancer. Members of families with the BRCA2 gene also seem to be at greater risk for

several other cancers, including ovarian cancer, prostate cancer, male breast cancer, and throat cancer."

While the BRCA1 gene took four years to clone, the BRCA2 gene took only one year. "Recent advances in molecular biology and the willingness of diverse groups to collaborate have really made a difference", said Dr. Tonin.

BRCA1 and BRCA2 genes together account for over 80% of families in Canada which are considered 'high risk' for breast cancer, i.e. where four or more cases have been recorded. Recent estimates of deaths resulting from breast and ovarian cancer in Canada are 1,700 in 1994. Genetic factors are responsible for up to 5% of breast cancer patients and 10% of ovarian cancer patients.

Said Dr. Michael Hayden, Scientific Director of the Canadian Genetic Diseases Network which partly funded Dr. Narod's research, "We are delighted that seed funding through the federal Networks of Centres of Excellence program, via the Medical Research Council of Canada, has contributed to both the BRCA1 and BRCA2 discoveries." He added, "The Network's facilities and collaborations across Canada will play an important part in the rapid progress of Dr. Narod's on-going research and eventual development of new diagnostics and therapies for these cancers."

The Canadian Genetic Diseases Network is a consortium of 38 of Canada's leading geneticists who are linked with twelve universities and hospitals across Canada, 10 core facilities, and 8 industrial partners to form an "institute without walls". The Network carries a mandate under the federal government's Networks of Centres of Excellence Program to perform leading-edge research and to create new commercial opportunities.

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