



BULLETIN



CANADIAN GENETIC DISEASES NETWORK

NETWORK SCIENTISTS COLLABORATE IN DISCOVERY OF GENE ASSOCIATED WITH COLON CANCER

Toronto - August 22, 1996: A team of researchers at the Hospital for Sick Children in Toronto has discovered a gene implicated in the development of colon cancer. The findings which are published in the August 23 issue of the science journal, *Cell*, bring scientists one step closer to understanding what causes cells to multiply uncontrollably and lead to the development of cancer.

The research project was headed by Dr. Liliana Attisano and Dr. Jeffrey Wrana at the Hospital for Sick Children (HSC). The contribution of a team of Network investigators led by Dr. Stephen Scherer and Dr. Lap-Chee Tsui in the chromosomal mapping and mutational analysis of the gene was essential for the success of the project.

The gene, called MADR2 which is located on chromosome 18, has been found to be a tumor suppressor gene. Mutation analysis of DNA and biochemical analyses of the gene product (protein) in patient samples indicate alterations in the protein causes a loss of sensitivity to a transforming growth factor known as TGF β . This in turn leads to cell proliferation and the development of tumours. Besides MADR2 being involved in colon cancer, another MADR gene was recently shown to be involved in pancreatic cancer. The group now believes that the MAD family of genes (there are at least 5 other genes) may represent a class of tumour suppressors which could be responsible for the development of other human tumours.

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Said Dr. Scherer, a member of the Department of Genetics at HSC, "The discovery resulted by combining expertise in biochemistry, molecular biology, clinical analysis, and genomics. The findings are an excellent example of how the resources and information generated from the Human Genome Project are being utilized in the fields of clinical and basic research. As a result of this specific project we have gained a better understanding of the mechanisms which cause tumours." He added "From a broader perspective our study illustrates that interdisciplinary collaborations are becoming increasingly important to comprehend gene function and disease."

Dr. Lap-Chee Tsui, newly appointed Chief Geneticist at HSC and Director of the Scientific Advisory Board of the Canadian Genetic Diseases Network, commented "Support for this ground-breaking research has been provided from a number of foundations and institutes in both Canada and the U.S., including the Canadian Genetic Diseases Network, the Medical Research Council of Canada, and the Canadian Genome Analysis and Technology Program. Without this funding the project would not have been possible."

The Canadian Genetic Diseases Network is a consortium of 37 of Canada's leading geneticists who are linked with 11 universities, 8 hospitals, and 9 core facilities across the country. The Network performs leading-edge research on common genetically transmitted diseases and works with industry partners on methods of detection and treatment of the diseases. Core funding for Network programs is provided by the federal Networks of Centres of Excellence Program through the Medical Research Council of Canada.

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