



## International Cancer Genome Consortium

### **Data on more than 10,000 cancer genomes released by the International Cancer Genome Consortium**

TORONTO, ON (February 4, 2014) — The International Cancer Genome Consortium (ICGC) today announced that it has made available to the scientific community data from more than 10,000 cancer genomes. The data can be used by cancer researchers around the world to better understand the genomic basis of cancer, accelerate cancer research and aid in the development of more targeted treatments.

“In 2012 an estimated 14 million people around the world were diagnosed with cancer and 8.2 million people died of the disease, according to GLOBOCAN. By 2025 it is expected that more than 20 million new cancer cases per year will be diagnosed due to growth and ageing of the population,” said Dr. Tom Hudson, President and Scientific Director of the Ontario Institute for Cancer Research (OICR) and a founder of the ICGC. “There is a clear need for new solutions to the cancer problem. Better understanding the genomic basis of cancer will lead to better cancer prevention and control measures, key priorities set out in the World Cancer Report 2014.”

The World Cancer Report 2014 was released on February 3, 2014 in London, in advance of World Cancer Day. It is published every five years to provide accessible information on cancer to policy-makers and healthcare professionals outside of the cancer field. It is also intended to update cancer specialists on the most recent and important developments in cancer research and control.

Hudson contributed a chapter to this year’s report, where he describes how cancer can be viewed as a disease of the genome and how mutations within the genome drive tumor growth. He also explains how these mutations can vary between people and across different populations because of genetic diversity and factors such as environmental exposures and diet. This diversity leads to the many different types and subtypes of cancer seen today. The chapter also describes how the ICGC is sequencing more than 25,000 tumor samples to generate a catalogue of cancer mutations related to 50 types of cancer.

“Ontario’s investments have secured our position as a leading jurisdiction in cancer research,” said The Hon. Reza Moridi, Ontario Minister of Research and Innovation. “This attracts world-leading researchers — scientists who are improving the lives of people in Ontario and around the world. The Ontario Institute for Cancer Research has been instrumental in creating important collaborations and enabling critical progress in moving discoveries out of the lab and into clinics. Not only does this help patients, it also contributes significantly to Ontario’s innovation economy.”

Researchers at OICR have been conducting large-scale cancer genome studies as part of the ICGC. Global cancer genome projects of the ICGC have made several important discoveries, including the identification of many new cancer processes and genes. These studies have shown that the mutation rates vary by 1,000-fold across cancer types and that cancers possess a combination of distinct mutational patterns, some of which are linked to known mutagens such as cigarette smoke and UV light.

"Cancer is incredibly complex, with significant heterogeneity among patients, even with tumors of similar characteristics, and there is significant intra-tumoral heterogeneity that evolves over time and in response to therapy," said Dr. Lincoln Stein, Director of OICR's Informatics and Bio-Computing Program and Director of the ICGC's Data Coordination Centre housed in Toronto, Canada. "There is still a lot to learn, but we are on the right path and we are making important advances in our understanding of cancer."

### **About the International Cancer Genome Consortium.**

The ICGC, comprised of research organizations around the world, is committed to making data rapidly and freely available. Cancer genome data are available on more than 10,000 tumors through an Internet portal at [www.icgc.org](http://www.icgc.org). Each ICGC member project is conducting a comprehensive, high-resolution analysis of the full range of genomic changes in at least one specific type or subtype of cancer, with studies built around common standards of data collection and analysis.

Currently, the ICGC has received commitments from funding organizations in Asia, Australia, Europe, North America and South America for 71 project teams in 17 jurisdictions to study over 25,000 tumor genomes. Projects that are currently funded are examining tumors affecting: the biliary tract, bladder, blood, bone, brain, breast, cervix, colon, eye, head and neck, kidney, liver, lung, nasopharynx, oral cavity, ovary, pancreas, prostate, rectum, skin, soft tissues, stomach, thyroid and uterus. The genomic analyses of tumors conducted by ICGC members in Australia (ovarian and pancreatic cancer), Canada (pancreatic and prostate cancer), China (kidney cancer), France (liver and kidney cancer), Germany (blood, brain and prostate cancer), India (oral cancer), Japan (liver cancer), Saudi Arabia (thyroid cancer), Spain (blood cancer), the UK (blood, bone, breast, and esophageal cancer) and the USA (bladder, blood, brain, breast, cervical, colon, head and neck, kidney, liver, lung, ovarian, pancreatic, prostate, rectal, skin, stomach, thyroid and uterine cancer) are now available through the Data Coordination Center housed on the ICGC website at [www.icgc.org](http://www.icgc.org).

For more information and updates about ICGC activities, please visit the website at: <http://www.icgc.org>.

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