

Cancer Genomics of the Kidney (CAGEKID)

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Research Areas



Biomarker Research

Diagnostic, Genomic Biomarker



Data-Sharing Enabler

At a Glance

- Status: **Completed Consortium**
- Year Launched: **2010**
- Initiating Organization: **European Commission Seventh Framework Programme (FP7)**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

The Cancer Genomics of the Kidney (CAGEKID) consortium brings together expertise in clinical care and epidemiology with genomic expertise. This consortium is an effort of the larger International Cancer Genome Consortium (ICGC), which has the goal of obtaining a comprehensive description of genomic, transcriptomic, and epigenomic changes in 50 different tumor types and/or subtypes with the aim of elucidating the genomic changes present in the many forms of cancers that contribute to the burden of disease throughout the world.

Mission

The aim of the Cancer Genomics of the Kidney consortium is to carry out comprehensive detection of DNA markers for conventional (clear cell) renal carcinoma, an important tumor type that is focused on by the International Cancer Genome Consortium.

CAGEKID plans on undertaking complete analysis of somatic and constitutional DNA variation, methylation patterns, and expression in at least 100 constitutional/tumor pairs (as a first stage toward

full analysis of 500 pairs), by mobilizing existing clinical and epidemiological networks to obtain a minimum of 2,250 additional incident kidney cancer sample pairs for follow-up of potential disease markers. The samples will be extensively annotated with clinical and epidemiological data. CAGEKID data will be open to the scientific community and maintained in archives at the European Bioinformatics Institute. The data will also be contributed to the ICGC following the guidelines that will be adopted by the international consortium.

CAGEKID partners will obtain antibodies where possible to genomic targets identified within the framework of the program, adding an important additional resource component to the application. Although the initial focus is on clear cell carcinoma, the consortium has plans on using the same infrastructure to obtain samples for other forms of renal cancer.

The consortium aims to advance sequencing technology, as well as standardize collection and sample preparation protocols for patient recruitment and sample selection. Training in methodology used in CAGEKID and information on the results will be available to the broader scientific and medical public. In addition to publications and presentations, CAGEKID will also share the methods and results in a series of training workshops organized and led by the consortium partners.

Financing

EU FP7

Novel biomarkers for renal cell cancer (RCC)

Somatic and DNA variation, methylation patterns, and protein expression were investigated in the first steps of analysis. Data were stored in the Kidrep repository for future reference and comparison. Standard operating procedures were developed for nucleic acid extraction and sample preparation. Potential biomarkers were identified from complete genome mapping of 45 samples. Kidney cancer sample data from the ICGC were analyzed thoroughly to validate potential disease markers identified from the 45 sample pairs.

Biomarkers for renal cell cancer could be used for early diagnosis and provide targeted therapy. Early detection of RCC could improve prognosis for affected patients and give valuable insights into variability in RCC incidence across Europe and globally.

Homepage

<http://www.cng.fr/cagekid>

Points of Contact

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Institute of Hygiene and Epidemiology

Department of Epidemiology and Prevention, Russian

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Society

European Molecular Biology Laboratory, European

Bioinformatics Institute

Karolinska Institute/ Karolinska University Hospital

Center BioEngineering, Russian Academy of Sciences

Cancer Research UK Centre, University of Leeds, UK

Royal Institute of Technology, KTH

Centre National de Génotypage, Institut Génomique,

Commissariat à l'Energie Atomique et aux Energies

Alternatives

Institut National de la Santé et de la Recherche Médicale

Institute of Mathematics and Computer Science

Uppsala University

Kurchatov Scientific Center

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