

Wellcome Trust Case Control Consortium (WTCCC)

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Research Areas



Biomarker Research

Diagnostic, Genomic Biomarker



Basic Research



Data-Sharing Enabler

At a Glance

- Status: **Completed Consortium**
- Year Launched: **2006**
- Initiating Organization: **Wellcome Trust**
- Initiator Type: **Nonprofit foundation**
- Location: **Europe**

Abstract

The Wellcome Trust Case Control Consortium (WTCCC) was established with an aim to harness the power of newly available genotyping technologies to improve the understanding of the etiological basis of several major causes of global disease. The consortium has gathered genotype data for up to 500,000 sites of genome sequence variation (single nucleotide polymorphisms or SNPs) in samples ascertained for certain disease phenotypes. Analysis of the genome-wide association data generated has led to the identification of many SNPs and genes showing evidence of association with disease susceptibility, some of which will be followed up in future studies (Nature 2007; 447; 661-78). In addition, WTCCC has gained important insights into the technical, analytical, methodological, and biological aspects of genome-wide association analysis.

Mission

The primary purpose of WTCCC is to accelerate efforts to identify genome sequence variants influencing major causes of human morbidity and mortality, through implementation and analysis of large-scale, genome-wide association studies. Additional objectives include the development and

validation of informatics and analytical solutions appropriate to the scale and nature of the project, as well as use of the data generated to answer important methodological and biological questions relevant to association studies in general, and in the U.K. in particular (e.g., issues of population substructure).

The core of the study comprised an analysis of 2,000 samples from each of seven diseases (Type 1 diabetes, Type 2 diabetes, coronary heart disease, hypertension, bipolar disorder, rheumatoid arthritis, and Crohn's disease). For each disease, the case samples have been ascertained from sites widely distributed across Great Britain, allowing us to obtain considerable efficiencies by comparing each of these case populations to a common set of 3,000 nationally ascertained controls also from England, Scotland, and Wales. These controls come from two sources: 1,500 are representative samples from the 1958 British Birth Cohort, and 1,500 are blood donors recruited by the three national U.K. Blood Services. One of the questions that the WTCCC study has addressed relates to the relative merits of these alternative strategies for the generation of representative population cohorts.

Genotyping for this "main" Case Control study was conducted by Affymetrix using the ("commercial") Affymetrix 500K chip. As part of this study a total of 17,000 samples were typed for 500,000 SNPs.

Data Sharing

WTCCC anticipates that data generated from the project will be used by others, such as required for developing new analytical methods, in understanding patterns of polymorphism, and in guiding selection of markers to map genes involved in specific diseases.

Access to summary data and individual-level genotype data is available by application to the Wellcome Trust Case Control Consortium Data Access Committee. Access to data will be granted to qualified investigators for appropriate use. Individual-level genotype data and summary genotype statistics for WTCCC1 collections are held within the [European Genotype Archive \(EGA\)](#). For further information regarding EGA, contact ega-admin@ebi.ac.uk.

Sponsors & Partners

Homepage

<http://www.wtccc.org.uk/>

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