

Translational Research in Europe — Applied Technologies for Osteoarthritis (TREAT-OA)

 consortiapedia.fastercures.org/consortia/treat-oa/

Research Areas



Tool Development



Biomarker Research

Diagnostic, Genomic Biomarker



Basic Research

At a Glance

- Status: **Completed Consortium**
- Year Launched: **2008**
- Initiating Organization: **European Commission Seventh Framework Programme (FP7)**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

Translational Research in Europe—Applied Technologies for Osteoarthritis (TREAT-OA) will address the need for better treatment and diagnostics for osteoarthritis (OA) — the most common cause of disability in Europe. Currently no drugs can cure, reverse, or halt the disease. Nor are there reliable clinical biochemical markers for diagnosis or prognosis, which is an impediment to the management of OA, costs of therapeutic trials, and the development of disease-modifying drugs. TREAT-OA represents a large-scale, collaborative, integrated, transdisciplinary project utilizing a resource of 28,000 OA-phenotyped subjects with available genome-wide association scan data as well as leading basic science laboratories and technologies. This is the largest study of its kind that will address the generalizability and utility of genetic and biochemical risk factors throughout the European Union (EU).

Mission

The following are the key objectives of TREAT-OA:

Consortium History

January 2008: Project start

Financing

The project is funded by the European Union Seventh Framework Programme (FP7).

Impact/Accomplishment

The TREAT-OA project aims to find a solution to this problem by following a genetic approach for the identification of biomarkers for disease onset and progression. The ultimate goal is to provide targets for the design of therapeutic approaches.

Genome-wide analysis of hip, hand, and knee tissues from OA patients has been performed with special focus on various biochemical markers (CTX-2 and COMP) and pathways. OA gene variants are being studied in cohorts across Europe and in other ethnic groups, revealing that there are both universally applicable variants and variants only encountered in European populations.

Mutations have been found in all of the genes studied, and their functional outcome is being investigated in preclinical models. Aims to translate these findings into the in vivo OA models have revealed a role for the growth differentiation factor 5 (Gdf5) gene in OA when triggered by instability, strain, or cartilage damage.

Biomarker measurements in patient cohorts from all study centers are currently being performed and evaluated for their prognostic significance. Novel biomarkers (S-CIIM, S-C3M, S-CRPM) have been identified and coupled to genes with an OA-reported association (FRZB, GDF5, ANP32A, DIO2) and could form the basis for more accurate OA prognosis.

The TREAT-OA project has also implemented a high-throughput reporter-based assay for the identification of small molecule bone morphogenetic protein (BMP) modulators. Such tools provide a technology platform for obtaining new insights into the process of human OA and will ultimately identify potential therapeutic targets.



Biochemical and genetic diagnostic markers identified during the TREAT-OA project will offer a new means of predicting disease risk and severity. Partners are hopeful that the proposed approach could be useful for individuals at high risk who may benefit from prevention strategies.

Links/Social Media Feed

Other website http://cordis.europa.eu/project/rcn/88151_en.html

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