



BEATING HEART DISEASE TOGETHER



Cardiovascular GO Annotation Initiative

providing full GO annotation to genes associated with cardiovascular processes

Newsletter January 2009

The cardiovascular-associate gene list

The list of 4056 cardiovascular related genes has been increased to 4177 genes following the inclusion of 21 genes described as cardiovascular disease candidate biomarkers by Anderson (2005, PMID: 15611012) and 100 genes recently added to the ITMAT Consortia SNP array. This revised list will be available soon through the EBI [download](#) site and the [EBI cardiovascular webpage](#).

Meetings attended

In November Ruth attended the British Society for Immunology Congress in Glasgow. She gave a short talk, 'Immunology's time to GO', during the first plenary session and spoke to several people who visited the GO stand.

Gene annotation

To date, this initiative has associated over 7,000 GO terms to 908 proteins, of which almost 4,000 terms are to over 500 human proteins. 147 prioritised genes have been comprehensively annotated using GO terms, and a further 29 prioritised genes have had first pass annotation. We have decided to try a new approach to annotation this year. Rather than just taking genes from the cardiovascular-associated gene list we will be choosing specific cardiovascular-relevant processes, and annotating all genes involved in these processes. For example in December we researched the areas of telomere maintenance and the growth hormone release pathway. 17 human proteins associated with the growth hormone release pathway were annotated, including GH1, GHR, GHRH, GHRHR, HNF4A, IGF1, IL6, JAK1, JAK2, NR3C1, POU1F1, PRL, SOCS2, STAT3, STAT5A, STAT5B and TYK2. We will be limiting the time spent on each pathway to 2 weeks, consequently although 14 human proteins associated with telomere maintenance were annotated (ACD, BLM, ERCC1, ERCC4, ERCC6, POT1, TERF1, TERF2, TERF2IP, TERT, TIN2, TNKS, TNKS2, WRN) there was not enough time to annotated all of the proteins associated with this process.

Gene Ontology

Over 160 cardiovascular issues have been raised with the Gene Ontology Editorial team since the start of the project, resulting in the creation of 290 new GO terms. In December new terms were requested by the UCL team to describe several aspects of telomere maintenance or growth hormone pathways, such as protein localization to telomere, positive regulation of DNA strand elongation, DNA polymerase binding, positive regulation of single-stranded telomeric DNA binding, telomere maintenance via telomere shortening, growth hormone activity, growth hormone receptor complex, growth hormone receptor signaling pathway, JAK-STAT cascade involved in growth hormone receptor signaling pathway, negative regulation of growth hormone receptor signaling pathway.

Publications

Improvements to cardiovascular Gene Ontology. Lovering RC, Dimmer EC, Talmud PJ. Atherosclerosis. 2008 Nov 1 [Epub ahead of print] PMID: 19046747.

www.cardiovasculargeneontology.com
www.ebi.ac.uk/GOA/CVI

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