



BEATING HEART DISEASE TOGETHER



# Cardiovascular GO Annotation Initiative

*providing full GO annotation to genes associated with cardiovascular processes*

## Newsletter April 2009

### Gene annotation

To date, this initiative has associated 8,500 GO terms to over 1,000 proteins, of which 4,800 terms are to 650 human proteins. Since January we have focused our annotations on the following processes: TGF-beta SMAD signalling, insulin signalling, transcriptional regulation by TCF7L2, cholesterol esterification, foam cell differentiation and ryanodine-sensitive calcium-release channel activation. To improve annotation consistency Jim Hu (EcoliHub) and Mary Dolan (Mouse Genome Informatics) have created a wiki page that automatically generates a table comparing GO terms associated with one gene across multiple species. Following a request from the BHF-UCL team this system has been adapted to enable GO annotation of a subset of proteins from one species to be compared. So far we have used this facility to examine the annotation consistency across proteins associated with [insulin signalling](#) and also to check consistency within the [SMAD gene family](#). As always, suggestions for processes or proteins to annotate are welcome, along with suggestions for publications to use as a source of annotation data.

### Gene Ontology development

The process approach to annotation has resulted in the development of a variety of regulation terms for existing GO terms. However, in addition to these regulation terms, we have requested the following new terms, many of which have new child terms: [heart septum morphogenesis](#), [aorta smooth muscle tissue morphogenesis](#), [sarcoplasmic reticulum calcium ion transport](#), [lipoprotein receptor binding](#), [triglyceride homeostasis](#), [beta-catenin-TCF7L2 complex](#), [detection of hypoxia](#), [thrombin receptor signaling pathway](#), [cholesterol import](#) and [death domain binding](#). Varsha's review of SMAD signalling pathways has led to a discussion about revising the TGF-beta signalling, BMP signalling and SMAD signalling ontologies.

### Presentations

Ruth gave a Department of Medicine seminar at UCL in February entitled "GO For It! Gene Ontology - an essential resource", this seminar was attended by over 70 scientists from the Rayne.

### Meetings attended

In March, Varsha and Ruth attended the joint meeting of the London Hypertension Society and London Vascular Biology Forum and distributed leaflets describing this project. Also in March Ruth and Varsha attended the three-day GO Consortium (GOC) meeting, held in Oregon, using webex and conference call facilities. This was a very productive meeting which enabled the GOC to review the progress of the consortium groups and to discuss the future direction of GO.

### Upcoming meetings

In April Varsha will be attending the Third International Biocurator Conference, being held in Berlin. She will be presenting a poster entitled Cardiovascular Gene Ontology Annotation Initiative. If you are attending this meeting please come and discuss any GO issues with Varsha.

### MSc - Genetics of Human Diseases

This year the GO annotation team will be teaching a module of this new MSc course, please see <http://www.ucl.ac.uk/uqi/education/msc> for more details.

[www.cardiovasculargeneontology.com](http://www.cardiovasculargeneontology.com)  
[www.ebi.ac.uk/GOA/CVI](http://www.ebi.ac.uk/GOA/CVI)

Newsletter 5  
Editor: [R Lovering](#)