Renal Gene Ontology Annotation

Renal GO Annotation Initiative

Providing full GO annotation to proteins associated with renal development, function and disease processes

Newsletter April 2012

Welcome to the 12th quarterly newsletter highlighting the progress of the Renal GO Annotation Initiative.

The Kidney Research UK funded Renal GO Annotation Initiative has now ended and this is the final newsletter in the series. The aims of the initiative have been achieved in providing the biomedical research community with an information-rich resource, which can be used to assist the rapid evaluation of new experimental data. A process-specific approach has led to improvements to both the ontology to describe renal processes (in particular, renal system development) and to the annotation of renal-specific gene products. The benefit of this focused initiative has been demonstrated by the reanalysis of a microarray gene expression dataset where the improvement in GO annotation of renal specific proteins has improved the interpretation of the experiment, thereby enabling novel biological insights to help alleviate human renal diseases. These findings will soon be reported in full, in a publication we are currently preparing.

Renal target list

The list of renal curation targets now comprises 5,438 distinct proteins, which include human, murine and other mainly mammalian orthologues. The current GO annotations for all proteins that have been tagged with the acronym 'KRUK' can be viewed using the EBI's GO browser QuickGO (http://www.ebi.ac.uk/QuickGO/GAnnotation?protein=KRUK).

Protein annotation

To date, since 1st April 2009, this initiative has associated 43,858 GO terms to 2,810 distinct UniProtKB proteins from the prioritized renal-related list. Of these, 1,025 prioritized proteins have been comprehensively annotated using GO terms.

Gene Ontology development

As a result of this focused Renal GO Annotation Initiative, over 600 new renal specific GO terms have been created, which represents 1.6% of the whole of the Gene Ontology. There has been additional work to improve descriptions and relationships between various renal specific GO terms and taxon-constraint rules were set in place to assist appropriate curation.

Meetings

I attended a GO Consortium meeting held in Stanford, USA on 25th - 27th February 2012 where the focus was on annotation practice, improving annotation consistency and the use of the annotation extension field.

I also attended the 5th International Biocuration Meeting on April 2nd- 4th 2012 held in Washington D.C., USA, where I presented the features of the UniProt-GOA resource and the different GO annotation projects being carried out by the group.

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Finally…

I would like to take this opportunity to thank you all for your feedback and involvement with this initiative. In particular, I would like to acknowledge the various renal experts who have helped me prioritize the renal targets for GO curation and to those I have approached for their time in providing advice and input into the improvement and development of various new GO terms to describe renal-system development and renal physiology. It has been a pleasure working with such a supportive research community.

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