



Renal GO Annotation Initiative

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

Newsletter January 2012

Welcome to the 11th quarterly newsletter highlighting the progress of the Renal GO Annotation Initiative.

Renal target list

The list of renal curation targets now comprises 2,678 distinct renal-related 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 32,993 GO terms to 2,173 distinct UniProtKB proteins from the prioritized renal-related list. Of these, 901 prioritized proteins have been comprehensively annotated using GO terms. The main focus of annotation over the last 3 months has been proteins expressed in glomeruli from human kidneys with diabetic nephropathy as determined in [Gene expression profiling in glomeruli from human kidneys with diabetic nephropathy](#). Baelde HJ, Eikmans M, Doran PP, Lappin DW, de Heer E, Bruijn JA. *Am J Kidney Dis.* 2004 Apr;43(4):636-50.PMID:15042541. This improved annotation set will be used for reanalysis of the gene set within this publication to determine the impact of the focused renal specific GO annotation.

Annotation focus is also being placed on genes expressed in the peroxisome, an organelle surrounded by a single membrane and found in virtually all eukaryotic cells, including those of the kidney. Peroxisomes contain a large set of enzymes that are involved in the catabolism of very long chain fatty acids, branched chain fatty acids, D-amino acids, polyamines, and biosynthesis of plasmalogens, etherphospholipids critical for the normal function of mammalian brains and lungs.

Gene Ontology development

New GO terms are continuously being created, when required, to describe the functions and processes of the renal target gene products. The UniPathway2GO mapping is also ongoing and this involves the creation of new GO terms to describe the manually curated metabolic pathways represented by the UniPathway resource for the UniProtKB Knowledgebase.





Meetings

I presented a talk on 'Life as a database curator' at the EBI Open Day for MSc/ PhD students on 1st November 2011.

I attended the GO Consortium Meeting, which was held at UCL, London on 7th - 9th November 2011.

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

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

Publications

We are pleased to announce the publication of our latest paper, in collaboration with the Cardiovascular Gene Ontology Annotation Initiative (<http://www.ucl.ac.uk/cardiovasculargeneontology/>), which describes the benefit of performing focused annotation on proteins implicated in specific organ development and function. We show that such annotation efforts lead to improved interpretation of results from cardiovascular-related microarray datasets. Our effort to improve the annotation of proteins involved in renal development and function is hoped to achieve a similarly successful result.

The impact of focused gene ontology curation of specific mammalian systems. Alam-Faruque Y, Huntley RP, Khodiyar VK, Camon EB, Dimmer EC, Sawford T, Martin MJ, O'Donovan C, Talmud PJ, Scambler P, Apweiler R, Lovering RC. PLoS One. 2011;6(12):e27541. Epub 2011 Dec 9. PMID: 22174742.

Renal interest mailing list

Just a reminder that, you can sign up to receive future newsletters via the renal interest mailing list (renal@ebi.ac.uk). The list can also be used for discussion of any issues and suggestions for annotation improvements relating to the Initiative. If interested, please sign up at <http://listserver.ebi.ac.uk/mailman/listinfo/renal>.

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