

Functional Gene Annotation Initiative

Curating knowledge about proteins and microRNAs

Newsletter March 2019

Editor – Barbara Kramarz

[Alzheimer's Research UK \(ARUK\) Conference 2019](#)

Barbara and Ruth will be presenting posters at the next [ARUK Conference](#) in Harrogate on 19th - 20th March. Please come and see us to learn about Gene Ontology and how this resource can help dementia researchers to improve the outcomes of their high-throughput analyses. Our poster numbers are **P12.3** and **P12.9**.

Introduction to Bioinformatics and GO workshop – 16th - 17th May 2019

If you would like to attend our popular free two-day workshops, [please register](#) soon, as there will only be around 20 spaces this year. This workshop is funded by [ARUK](#) and provides an overview of several biological knowledgebases, as well as an introduction to GO and functional analysis tools.

We welcome Dr Milagros Rodriguez-Lopez

We are very excited to welcome [Dr Milagros Rodriguez-Lopez](#) to the ARUK-funded [neuroinflammation project](#). Mila is a scientific curator experienced in curating data for several bioinformatic resources including ChEMBL, IntAct, RNAcentral and Gene Ontology (GO). Recently, Mila has been working with [Sandra Orchard](#), who leads the Protein Function Content team at [EMBL-EBI](#). Since February Mila has also been contributing annotations for proteins with a role in neuroinflammation and dementia, as a part of the UCL-EMBL-EBI [ARUK](#)-funded collaboration.

Annotation of microRNAs targeting ‘good’ amyloid-beta receptors – Shirin’s MSc project progress

In January we [welcomed](#) Shirin Saverimuttu who started her MSc GO annotation project with us. Shirin has been using RNAcentral and GO resources to annotate microRNAs that regulate the ‘good’ [amyloid-beta](#) receptors, reviewed by [Jarosz-Griffiths et al., 2016](#), which we annotated previously ([Kramarz et al., 2018](#)).

We have finished annotating microRNAs targeting microglial proteins from our priority list

Before joining [SciBite](#) Rachael was working at UCL on annotation of microRNAs that regulate expression of [microglial proteins](#), which we have prioritised for annotation to curate neuroinflammatory processes. Barbara and Ruth have taken over this project and have now completed GO annotation of microRNAs shown to target the dementia-relevant microglial proteins. Collectively, we have contributed 939 annotations for 176 microRNAs implicated in dementia and/or inflammatory processes (EBI statistics, QuickGO accessed: 1st March 2019).

ARUK-UCL Gene Ontology annotation progress

Our ARUK-funded initiative has thus far resulted in 6827 GO annotations to 1059 distinct gene products, including proteins, microRNAs and macromolecular protein complexes involved in interactions with [amyloid-beta](#) and [tau](#) as well as in dementia-relevant [microglial processes](#). Of these, 4777 GO annotations have been associated with 620 human gene products (EBI statistics, QuickGO accessed: 1st March 2019). We have also contributed to ontology revisions and development and the number of GO terms, which we have either revised or added to the ontology since this initiative began in January 2017 has now reached 136 (GOC statistics, AmiGO2 accessed: 1st March 2019).

GREEKC text mining workshop

In February, Ruth attended the [GREEKC](#) workshop in Malaga, focused on ‘The role of text mining in curation workflows’, where the opportunities for text mining to improve the efficiency of manual curation were demonstrated. Although, it was also agreed that text mining will never replace manual curation. In the session introducing the ‘curation needs’ Ruth gave a presentation entitled ‘Protein level: transcription factors and co-factors’. During the workshop, Ruth also participated in an annotation jamboree, aimed at providing training sentences, describing transcription regulation, for text miners.

Recent Publications

Franceschini N, ... , Huntley RP, Lovering RC, ... , O'Donnell CJ. **GWAS and colocalization analyses implicate carotid intima-media thickness and carotid plaque loci in cardiovascular outcomes.** Nat Commun. 2018. [PMID:30510157](#).

Vadgama N, Lamont D, Hardy J, Nasir J, Lovering RC. **Distinct proteomic profiles in monozygotic twins discordant for ischaemic stroke.** Mol Cell Biochem. 2019. [PMID:30694515](#).