



Newsletter Issue #2

June 2018

*Translational quantitative systems toxicology to improve the understanding of the safety of medicines*

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We are pleased to present the **TransQST-Newsletter** Issue 2

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## Project News [Visit our website News section](#)

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### UOXF TransQST colleagues won the 2017 NC3Rs Prize

On the 12th of March 2018, the **National Centre for the 3Rs** (NC3Rs) – an organisation dedicated to replacing, refining and reducing the use of animals in research and testing – has awarded its top prize for a research paper on an *in silico* model that predicts cardiotoxicity developed and reported by the TransQST team from the Department of Computer of Science of the University of Oxford.



- [Human In Silico Drug Trials Demonstrate Higher Accuracy than Animal Models in Predicting Clinical Pro-Arrhythmic Cardiotoxicity](#). Passini E, Britton OJ, Lu HR, Rohrbacher H, Hermans AN, Gallacher DJ, Greig RJH, Bueno-Orovio A, Rodriguez B. *Frontiers in Physiology*. 2017 Sept 12.

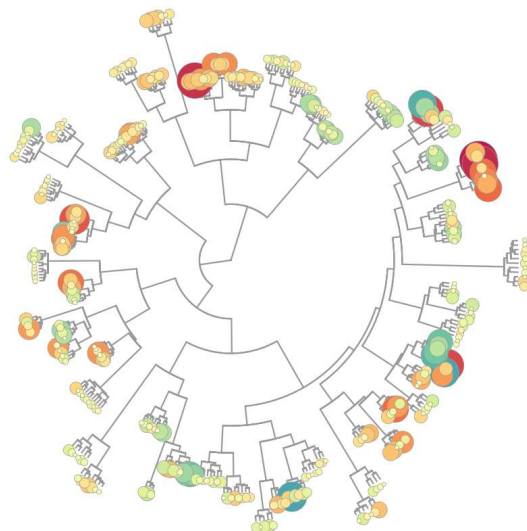
This excellent work will be implemented to address the TransQST Cardiovascular system modelling simulation to support drug development.

More information [here](#).

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## The TXG-rMAP, an innovative WGNCA tool

The research division of **Drug Discovery and Safety** led by Prof. Bob van de Water in the **University of Leiden (UL)**, as one of the TransQST partners, has developed a promising and innovative tool that contributes to the mechanistic understanding of potential adverse drug reactions that can be used during early drug development.



The **TXG-rMAP** open source application tool allows for **weighted gene co-expression network analysis (WGCNA)**.

As first use case, the team has mined the data of **TG-GATES** database on **primary human hepatocytes gene expression data** and established WGCNA modules, which are available through the tool website.

**The tool offers a dedicated upload function that allows to overlay a new set of gene expression data from Primary Human Hepatocyte onto the built WGNCA network.** New Eigengene Scores for all the modules in the toxicogenomic network are calculated considering the newly uploaded data. Users can analyze dose- and time-response curves, compound correlation plots and gene ontology terms to derive mechanistic information from large transcriptomic datasets.

More information in the [tool website](#).

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## TransQST met eTRANSAFE

Both IMI projects, eTRANSAFE and **TransQST**, work in the **Translational Safety Assessment** field, **TransQST** from the biology perspective and eTRANSAFE from the chemistry perspective.

Professor Ferran Sanz as academic coordinator of eTRANSAFE IMI project, presented the eTRANSAFE goals to the **TransQST** consortium in the **TransQST** General Assembly meeting (GAM1) held at the Tuohilampi training center of Orion pharma on the 25-26th of April in Helsinki.

Professor Bob van de Water, from University of Leiden, presented the **TransQST** project to the eTRANSAFE consortium in their 3rd consortium meeting held on the 4-5th of June in Barcelona.

**Twelve partners belong to both projects**, and there is a common interest to establish collaboration between these consortia which could highly benefit from the data and modelling approaches generated in both projects for the development of new and safer medicines.



More information about eTRANS SAFE [here](#).

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## TransQST Early Review

Following the Description of Action plan, the **TransQST** consortium presented the status and workplan of the different workpackages in an interim review agreed with the IMI to take place on the Month 18 of the project.

On the 14<sup>th</sup> of June, a delegation of 17 representative (Executive Committee members and WPs leaders) presented an overview of the activities done during the first 18 months of the project life. They explained the workplan and vision to the expected impact in the drug development pipeline that the consortium foresees through the innovative modelling approaches under development in the framework of **TransQST** project.

The experts panel feedback and the report received weeks after of the meeting stated that the IMI JU considers the project implementation satisfactory, and shared some additional recommendations to even improve further the full implementation of the project.

More information [here](#).

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## Publications [Visit our website Publications section](#)

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[Quantitative systems pharmacology analysis of drug combination and scaling to humans: the interaction between noradrenaline and vasopressin on vasoconstriction.](#) Yin A, Yamada A, Stam WB, van Hasselt JGC, van der Graaf PH. *Br J Pharmacol.* 2018 Jun 2. Partner involved: **UL**.

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## IMI 10th Anniversary

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IMI is celebrating its 10th anniversary and **TransQST** is proud to be part of its success! IMI is working to overcome some of the biggest medical challenges and our project is contributing to taking a collaborative, open

TransQST will be presenting the following posters in the [IMI 10th Anniversary Scientific Symposium](#) which will be held in Brussels (Belgium) on the 22<sup>nd</sup> and 23<sup>rd</sup> of October 2018.

- [IMIM](#) – Network-based modelling of APAP-induced hepatotoxicity using interactomics and transcriptomics data
- [ULIV](#) – Integration of models of drug-induced liver injury for risk assessment

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*Next issue in December 2018*

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