Toxicogenomics-TGx; An emerging potential in Risk Assessment Predictive screening

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Abstract

Xenobiotics, including pharmaceuticals produce toxicant specific changes at the molecular level. The completion of the human genome sequencing now allows for the detection of direct relationships between induced toxicities and gene, protein, and metabolite expression. Data gathered from Toxicogenomic approaches are proving to have higher confidence value, more discriminatory, and sensitive than currently used techniques in predictive screening of toxicants in regulatory applications and decision making. TGx analysis can complement current testing regimes in risk assessment in many areas including cross specie extrapolations, by stander and low dose exposure assessments, Dose-response relationships; to build a wealth of evidence for a successful regulatory application.

Toxicogenomics (TGx) has contributed significantly to toxicology and now has great potential to support moves towards animal-free approaches in regulatory decision making. Here, we discuss in vitro TGx systems and their potential impact on risk assessment. We raise awareness of the rapid advancement of genomics technologies, which generates novel genomics features essential for enhanced risk assessment. We specifically emphasize the importance of reproducibility in utilizing TGx in the regulatory setting.

Biography:

Joshua Ochola is a Toxicologist at Sigma-Eco, Facilitating drug trial, monitoring and development on multiple trial plots.
•Standardisation of study design and protocol
•Screening of candidate drugs for efficacy
•Toxicity studies
•Data collation, interpretation, analysis and presentation. He completed MSc Toxicology at University of Cambridge.

Speaker Publications:

1. "prophylactic efficacy of moringa oleifera leaf extracts Against liver injury induced by artesunate-amodiaquine Antimalarial combination"

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