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Nematic protein organization technology: A powerful tool to track drugs toxicity and side effects already at early preclinical development

Pierre Eftekhari
Inoviem Scientific, France

Toxicity and lack of drug efficiency from preclinical to clinical phase, are two most important hinders for development of new therapies. These are mainly due to our lack of reliable knowledge at the early stage of drug development. Another major hinder is the drugs side effect after approval, which can lead to serious or life threatening conditions. Nematic protein organization technology (NPOT) identifies both therapeutic target (ON) and toxic or side effect targets (OFF). NPOT is label free and works in physiological conditions, directly on human tissue. Where clinical relevance from genomics remains uncertain NPOT provides reliable toxicity profile identifies biomarkers and isolate success predictors. NPOT's efficacy is shown by identifying OFF targets of two different drugs one from chloroquine family and one anti-TNF α therapy a biologic drug. They have led, at one hand to new molecule without any side effect yet improved clinical efficacy in Lupus as well as provided success predictors for anti-TNF α therapy in Inflammatory Bowel Disease (IBD). In addition thanks to NPOT we have improved our understanding on biological effects of a pharmacological active molecule at cellular and molecular levels. These findings explain the role of extracellular and intracellular matrix in expected beneficial or toxic effects. This knowledge redefines the modern pharmacology and toxicology, allowing the development of safer treatments. The author shall share these findings in detail, providing proofs and argument for the urgency to change our understanding and somehow dogmas in regard to the sciences of pharmacology and toxicology.

Biography

Pierre Eftekhari has completed his PhD from Strasbourg University. He has more than 17 years of experience in drug development and is the Director of Inoviem Scientific, a company dedicated to cutting edge solutions in drug development as well as the head of exploratory pharmaco/toxicology team at ICT, CNRS UPR 3572 Strasbourg. He has published more than 28 papers in reputed journals and filed several patents.

p.eftekhari@inoviem.com