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Professional Profile

Dr. Mistry possesses extensive applied mammalian toxicology and pathology experience, gained over 30 years in academia and industry - including 14 years working for a major crop protection company. As a human safety scientist with a passion for innovation, her techno-regulatory experience spans across R&D and product life cycle maintenance for plant protection products as well as biocides, industrial chemicals and consumer products.

Dr. Mistry has managed a portfolio of projects, designing and interpreting early investigative studies to aid candidate selection and identify unacceptable hazards early in the pipeline. Dr. Mistry has been instrumental in developing and supporting numerous external collaborations that explore multidisciplinary approaches to solve complex scientific challenges, such as mathematical modelling of in vitro or in vivo data to pioneer new innovative digital approaches.

As a strong advocate for in vitro methods in toxicology and emerging technologies, Dr. Mistry has championed numerous initiatives supporting Replacement, Refinement, and Reduction of Animal use and has chaired the UK In Vitro Toxicology Society. Additionally, Dr. Mistry has written grant applications, successfully supervised four Ph.D. students, and contributed to numerous publications in the field, including a white paper on the utility of stem cells in toxicology for a working group supported by the European Partnership for Alternative Approaches to Animal Testing.

Academic Credentials & Professional Honors

Ph.D., Medicine, University of Leicester, 2002

Prior Experience

Toxicologist & External Collaborations Manager, Syngenta, Bracknell, 2007-2018

Business Project Manager, KWS BioTest, Bristol, 2006-2007

Research Scientist, pSiMedica Ltd, Malvern, 2004-2006

Postdoctoral Research Associate, Dept. of Biochemistry, University of Leicester, 2001-2004

Graduate positions, Dept. of Pathology, University of Leicester, 1996-2001

Professional Affiliations

UK In Vitro Toxicology Society (Honorary member)

British Toxicology Society

Publications

Mistry P, McInnes EF, Beevers C, Wolf D, Currie RA, Salimraj R and Parsons P (2021). An evaluation of carcinogenicity predictors from short-term and subchronic repeat-dose studies of agrochemicals in rats: opportunities to refine and reduce animal use. Toxicology Letters

Kyffin JA, Cox CR, Leedale J, Colley HE, Murdoch C, Mistry P, Webb SD and Sharma P (2019). Preparation of Primary Rat Hepatocyte Spheroids Utilizing the Liquid-Overlay Technique. Current Protocols in Toxicology, 81(1)

Kyffin JA, Sharma P, Leedale J, Colley H, Murdoch C, Mistry P and Webb SD (2019). Characterisation of a functional rat hepatocyte spheroid model. Toxicology In Vitro 55: 160-172

Sorrell I, Shipley RJ, Regan S, Gardner I, Storm MP, Ellis M, Ward J, Williams D, Mistry P, Salazar JD, Scott A, Vickers C, and Webb S (2019). Mathematical Modelling of a Liver Hollow Fibre Bioreactor. J. Theoretical Biology. Volume 475: 25-33

Kyffin JA, Sharma P, Leedale J, Colley H, Murdoch C, Mistry P and Webb SD (2018). Impact of cell types and culture methods on improving functionality of In Vitro Liver Systems – A review of cell systems for xenobiotic safety. Applied In Vitro 48: 262-275

Dott W, Mistry P, Wright J, Cain K and Herbert KE (2017). Integrated Metabolic models for xenobiotic induced mitochondrial toxicity in skeletal muscle. Redox 18: 198-210

Ward J, Dunster J, Derks G, Salazar D and Mistry P (2016). Predicting tyrosinaemia: a mathematical model defining species differences of 4-hydroxyphenylpyruvate dioxygenase inhibition by nitisinone. Math Med Biol June 15

Suter-Dick L, Ingelman-Sundberg M, Mistry P, Fowler P, Roth A, Stedman D, Bremm KD, Hescheler J, Brito C, Alves PM, Blaauboer BJ, Jennings P, Kelm JM, van der Water B, Coecke S, Manou I, Beilmann M (2015) Stem Cell-Derived Systems in Toxicology Assessment. Stem Cells & Development 24(11)

Dalzell AM, Mistry P, Wright J, Williams FM and Brown CDA (2015). Characterisation of the transport of avermectins by MDR1/Mdr1a and MRP efflux transporters in human SH-SY5Y and mouse N2a neuroblastoma cell lines. Tox Letters 235 189–198

Dott W, Mistry P, Wright J, Cain K and Herbert KE (2014). Modulation of mitochondrial bioenergetics in a skeletal muscle cell line model of mitochondrial toxicity. Redox 2: 224-33

Cantrill C, Mistry P, Wright J, Stevens A and Penny J (2012). Evaluating in vitro models for the prediction of CNS exposure to chemical entities. Tox Sci, 1834

Taylor L, Penny J, Wright J and Mistry P (2012). Comparative expression analysis of membrane transporters and metabolising enzymes in the rat and human placenta during gestation. Tox Sci, 1942

Dott W, Mistry P, Wright J and Herbert K (2011). Identification of mechanistic biomarkers of cardiac and skeletal muscle Toxicity to aid the development of tissue-specific in vitro models. Tox Sci, 1589

Taylor L, Mistry P, Wright J and Penny J (2010). The interaction of placental efflux transporters with xenobiotics. Tox Sci, 1598

Mistry P, Deacon K, Blank JL and Patel R (2004). NF□B activation promotes cell survival in mitotically arrested cells. J Biol Chem 279:1482–1490

Mistry P and Herbert KE (2003). Modulation of hOGG1 DNA repair enzyme in human cultured cells in response to pro-oxidant and antioxidant challenge. Free Radical Biol Med 35:397–405

Deacon K, Mistry P, Blank JL and Patel R (2003). p38 MAP kinase mediates cell death and p21-activated kinase (PAK) mediates cell survival during chemotherapeutic drugs-induced mitotic arrest. Mol Biol Cell 14: 2071–2087

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