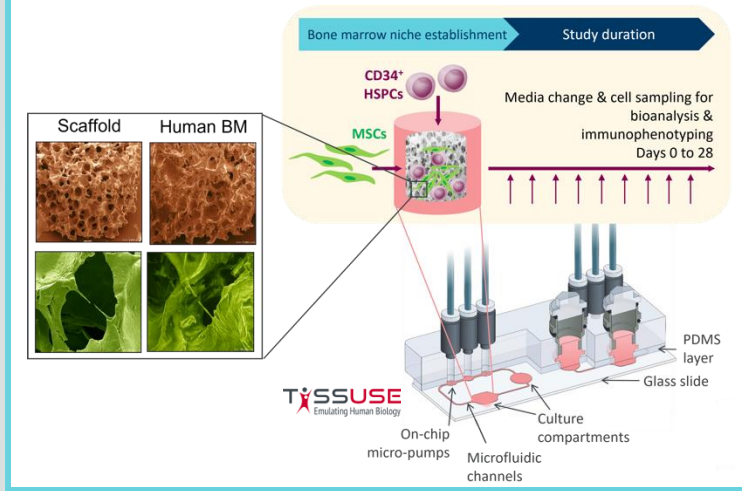
2025 MPS World Summit Education Workshop – Track 1:

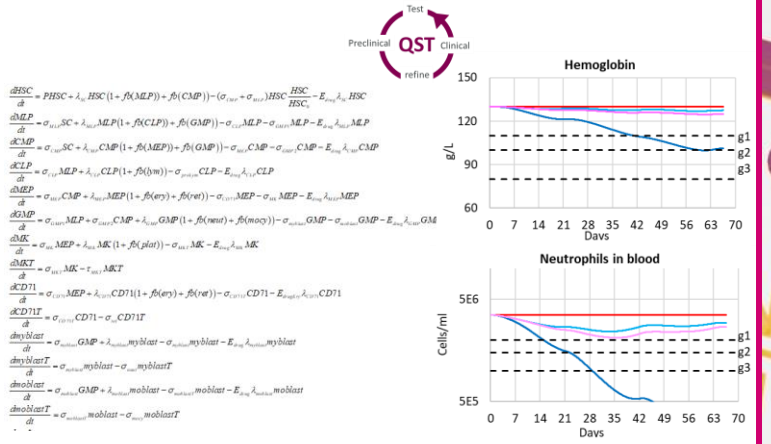
Human bone marrow advanced cell models for assessing drug safety

AstraZeneca

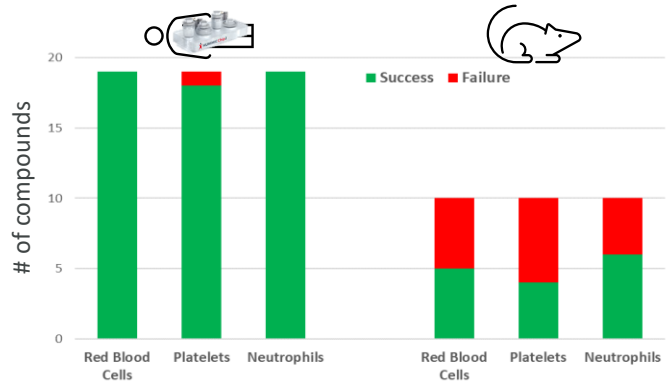
Bone marrow Microphysiological system (MPS)



Translational mathematical model of human haematopoiesis & clinical haematology predictions



BM MPS modelling approach more predictive of clinical haematotoxicity than *in vivo* rat studies



Bone marrow (BM) MPS mimics the complex architecture & cellular interactions of living BM

Multi-lineage differentiation & stem cell maintenance over 4-6 weeks enables capture of lineage-specific haematotoxicity associated with monotherapy & combination therapies

Pertinent references: Sieber et al 2018; Cairns et al 2023

Integration of BM MPS cell toxicity and LC/MS drug exposure data with a quantitative systems toxicology (QST) framework, enables translation of preclinical findings to clinical outcomes

The BM MPS & QST modelling approach has superior translatability over rat in vivo studies & can be applied to all therapy areas with associated haematological risk

Thank you for your interest! *For follow-up discussion, please reach out directly*:

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