

Project ID: 2023-HESI1**Omics for Assessing Signatures for Integrated Safety (OASIS) Consortium**

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The Omics for Assessing Signatures for Integrated Safety Consortium (OASIS) was officially launched in January 2023 by the Health and Environmental Sciences Institute (HESI). OASIS is a multi-disciplinary, multi-sector initiative focused on increasing confidence in multi-omics techniques (phenomics, transcriptomics, and proteomics) for safety assessment. To accomplish this goal, the ACC LRI is participating in this consortium comprised of experts from 10 public sector and 11 private sector organizations. The laboratory work is being conducted by the Broad Institute of MIT and Harvard. *In vitro* data will be generated using molecular and phenotypic cell-based assays that will then be benchmarked to existing *in vivo* data of the same compounds. The project aims to generate a large novel *in vitro* dataset across multiple omics techniques, explore the potential to use these techniques for safety assessment (especially phenotypic profiling using cell painting technologies), and develop open source informatic methods for the assessment of combined omics datasets.

Implications: The results of the *in vitro* assays will be used to generate points of departure (PODs). These *in vitro* PODs will then be compared to PODs derived for the same compounds from existing *in vivo* datasets. These comparisons will inform scientific confidence evaluations of the *in vitro* omics technologies as potential NAMs to be used in lieu of traditional *in vivo* lab animal toxicity tests for risk-based evaluations.

Project start and end dates: January 2023 – December 2025

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