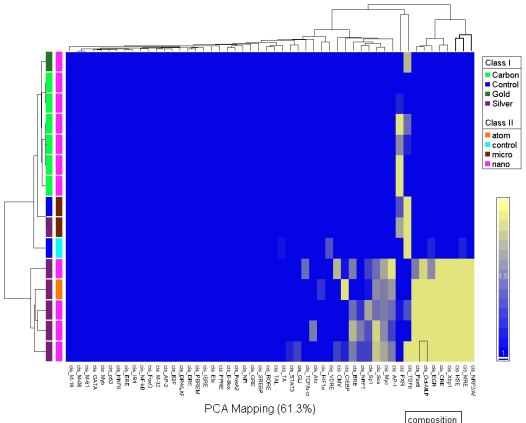
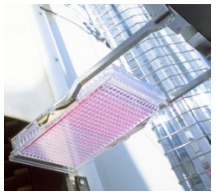
ToxCast High-throughput screening (HTS) of nanomaterial bioactivites in cultured cells and zebrafish embryos

National Center for Computational Toxicology (NCCT), U.S. EPA In Collaboration with CEINT





Preliminary analysis of CNT and nano-Ag results suggested that

- Cell-based HTS assays can be used for nanomaterials
- HTS we used did not detect CNT toxicity
  - Cytotoxicity : $AgNO_3$ > nano-Ag of various coating (relative ranking vary by cells) >>> CNT
  - Nano-Ag and $AgNO_3$ affected similar pathways/ functions, while CNT affected different pathways/ functions
- CNT and nano-Ag did not increase malformation in zebrafish embryos
  - Decreasing viability: $AgNO_3$ > nano-Ag-gum arabic > nano-Ag_M300 (from ENPRA) >>> CNT, nano-Ag –citrate, nano-Ag-PVP, or micro-Ag

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