1-Slide U54 summary received from the NCI

The Houston Center for Acquired Resistance Research

The Houston Center for Acquired Resistance Research (H-CARR)

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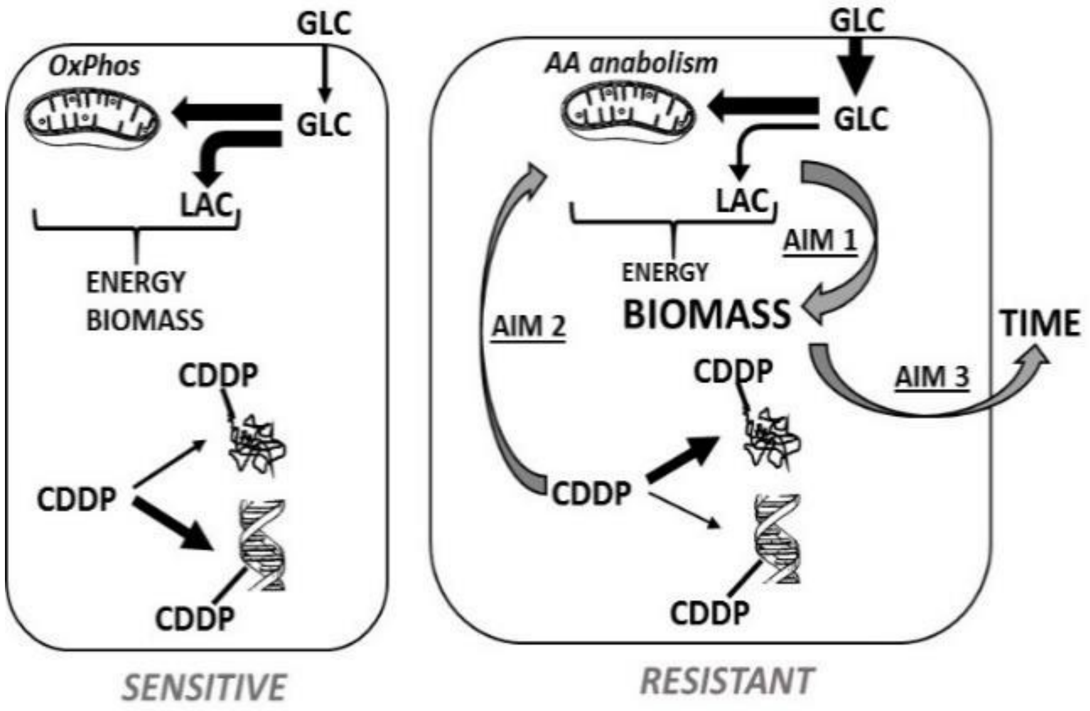
- Metabolic Adaptation (NRF2 axis)
- Real-Time Resistance Monitoring w/HP-MRI + CTCs + EAp53 Algorithm
- Tumor-Nerve-Immune Dynamics



(HNSCC)

- *Metabolic reprogramming in HNSCC acquire resistance to cisplatin*
- *Clinical detection, monitoring and management of acquired resistance w/HP-MRI & CTC biomarker platform*
- *Role of Neuronal reprograming in local and distant metastasis/response to therapy*

- **P1 Mechanisms of Metabolic shift and TiME in Acquired Radioresistance**
  - ✓ *GPX2, NF-kB, KEPA1-NRF2 pathways, Tumor Immune Microenvironment (TiME)*
  - ✓ *PDX, orthotopic tongue mouse model*
- **P2 Activation of the Nrf2 is a Permissive Step to Acquired Cisplatin Resistance**
  - ✓ *Nrf2/KEAP1 mutation, neuronal reprograming, p53 stabilization, p53 algorithm*
  - ✓ *Novel GLS inhibitors, CRISPR screen, exome and RNA-seq*
- **P3 Imaging and CTC Analyses to Detect Metabolic Reprograming by Nrf2**
  - ✓ *HP-MRI, orthotopic HNSCC xenograft, HNSCC patients*
  - ✓ *Clinical response to cisplatin-based therapy on CTC*
  - ✓ *Genomic and transcriptomic analyses*
- **System Bioinformatic Core**
  - ✓ *Facilitate large scale analyses of diverse omics data, integration, visualization, and interpretation*
- **Tumor Modeling & Biorepository Core**
  - ✓ *Ensure the systematic collection, processing, storage, and distribution of peripheral blood, surrogate and specialized specimens, samples of HNSCC primary and metastatic lesions from patients at MD Anderson and Baylor*