DATA MANAGEMENT AND SHARING PLAN

If any of the proposed research in the application involves the generation of scientific data, this application is subject to the NIH Policy for Data Management and Sharing and requires submission of a Data Management and Sharing Plan. If the proposed research in the application will generate large-scale genomic data, the Genomic Data Sharing Policy also applies and should be addressed in this Plan. Refer to the detailed instructions in the application guide for developing this plan as well as to additional guidance on sharing.nih.gov. The Plan is recommended not to exceed two pages. Text in italics should be deleted. There is no "form page" for the Data Management and Sharing Plan. The DMS Plan may be provided in the *format* shown below.

Element 1: Data Type

A. Types and amount of scientific data expected to be generated in the project:

The data will be generated from muscle and liver tissues of genetically modified mice engineered to knockout or overexpress glutamate dehydrodgenase and the mitochondrial glutamate-oxaloacetate transaminase. The data will include several parameters indicating mitochondrial function, metabolite concentrations, and data describing mitochondrial metabolite flux and isotopomer distribution. The activity of succinate dehydrogenase (SDH) and expression of SDH will be included as well as redox parameters. Whole mouse data will include body mass distribution, liver glycogen and fat, and parameters of gas exchange. Data will also include isotopic distribution of metabolites to liver and muscle after in vivo injection of labeled glucose or glutamine as well as plasma analytes, rates of gluconeogenesis and glycogenolysis, and metabolomic profiling of liver and muscle.

B. Scientific data that will be preserved and shared, and the rationale for doing so:

All the above scientific data will be preserved and shared as reasonably requested. The rationale is to advance our overall scientific knowledge.

C. Metadata, other relevant data, and associated documentation:

We will publish detailed data on methods we use for our research in any publications associated with this work.

Element 2: Related Tools, Software and/or Code:

Metabolite data can be analyzed using the software program MetaboAnalyst.

Element 3: Standards:

Phenotypic and metabolic data will be in published work.

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Element 4: Data Preservation, Access, and Associated Timelines

A. Repository where scientific data and metadata will be archived:

Data generated from laboratory techniques, phenotypic data, and methods related to the study will be published and as requested by journals will be entered into appropriate repositories such as Figshare.

B. How scientific data will be findable and identifiable:

We will publish data from laboratory techniques, phenotypic data, and methods related to the study. All the original data files generated from the study will be with the research team and will be provided on reasonable request. Links to repositories will be provided in publications.

C. When and how long the scientific data will be made available:

Data will be shared at the time of publication or the end of award period. Duration of retention and access to the data is dependent on the recommendations of our institution and the NIH. We anticipate as many as ten years or more of availability.

Element 5: Access, Distribution, or Reuse Considerations

A. Factors affecting subsequent access, distribution, or reuse of scientific data:

There should be no factors affecting access, distribution, or reuse of scientific data.

B. Whether access to scientific data will be controlled:

The data should be available upon reasonable request.

C. Protections for privacy, rights, and confidentiality of human research participants:

There will be no human data.

Element 6: Oversight of Data Management and Sharing:

Data will be submitted by Dr. Sivitz (PI). He will ensure the data is stored and/or submitted to repositories. His research team and collaborators will provide oversight and ensure compliance by Dr. Sivitz with the plan during regular meetings.