Plan Overview

A Data Management Plan created using DMPTool

Title: A non-canonical IRAK1 signaling pathway triggered by ionizing radiation

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Funder: National Institutes of Health (nih.gov)

Template: NIH-Default DMSP

Last modified: 02-27-2023

A non-canonical IRAK1 signaling pathway triggered by ionizing radiation

In this proposed project, data will be generated via the following methods: state-of-the art cell culture genetics (CRISPR/Cas9-generation of stable KO lines, siRNA-mediated gene knockdowns), state-of-the-art genetic techniques in zebrafish embryos (CRISPR/Cas9-generation of stable KO lines, morpholino antisense oligonucleotide-mediated gene knockdowns), state-of-the-art genetic techniques in Drosophila (Gal4-UAS-driven RNAi, mitotic mutant clones), light microscopy, confocal microscopy (cell culture-fixed and live, whole mount zebrafish immunofluorescence, fluorescence imaging of live zebrafish embryos and dissected fly imaginal discs), protein co-immunoprecipitation, size exclusion chromatography (gel filtration) and mass spectrometry. This data will be collected from a minimum of 3 independent experiments, with each independent experiment consisting of negative control, positive control and test groups in the absence of presence of ionizing radiation and/or interleukin-beta. The total size of the data collected is projected to be 300 GB.

We expect to generate the following data file types and formats during this project: Carl Zeiss microscopic image file (.CZI), images (.TIFF, .JPEG, .PNG), and tabular (.CSV, .XLS, .PZFX).

Raw data files will be analyzed to generate CSV, XLS and PZFX files to enable statistical analysis.

All data produced in the course of the project will be preserved and shared.

All reagents resulting from this grant will be available to academic investigators based on requests for published materials. Nonpublished reagents will be provided via collaboration or freely distributed based on their scientific value. Material transfers will be made in accordance with the Mount Sinai School of Medicine Office of Industrial Liaisons.

All zebrafish mutant lines used in this study have either been published and are available to the scientific community through the Zebrafish International Resource Center, or will be generated and made available through the same resource center.

N/A

Image and tabular data will be made available in .TIF, .JPEG, .CSV, .XLS and .PZF format and will not require the use of specialized tools to be accessed or manipulated.

The raw data generated via the confocal microscope is in the Carl Zeiss (.czi) file format. Zeiss software or Fiji ImageJ is required to access the raw data.

Fiji ImageJ is open-source software that can be downloaded freely online. Links to this or other open-source viewers will be included with the documentation for the shared dataset.

In accordance with FAIR Principles for data, we will use open file formats (e.g. JPEG, CSV, TXT, PDF, HTML, etc.) and persistent unique identifiers (PIDs) such as RRIDs for resources (e.g., organisms, plasmids, antibodies, cell lines, software tools, and databases) and DOIs for protocols using protocols.io.

All dataset(s) that can be shared will be deposited in the Zebrafish Information Network (ZFIN) and Zebrafish International Resource Center (ZIRC), FlyBase and NCI's Imaging Data Commons.

We will use Persistent Unique Identifiers (PIDs) to improve data findability across all dissemination outputs. PIDs used will include ORCID iDs for people, DOIs for outputs (e.g., datasets, protocols), Research Resource IDentifiers (RRIDs) for resources, and Research Organization Registry (ROR) IDs and funder IDs for places, as

much as possible to make data identifiable and findable.

All scientific data generated from this project will be made available as soon as possible, and no later than the time of publication or the end of the funding period, whichever comes first. The duration of preservation and sharing of the data will be a minimum of 10 years after the funding period.

There are no anticipated factors or limitations that will affect the access, distribution or reuse of the scientific data generated by the proposal.

Controlled access will not be used. The data that is shared will be shared by unrestricted download.

N/A

Lead PI Samuel Sidi, ORCID: 0000-0001-7649-067, will be responsible for the day-to-day oversight of lab/team data management activities and data sharing.
