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Investigation of the Endogenous Opioid Neural Circuitry in Pain

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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](https://www.nih.gov/data-management/data-sharing). 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.

Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering, and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: NIH, Project Clearance Branch, 6705 Rockledge Drive, MSC 7974, Bethesda, MD 20892-7974, ATTN: PRA (0925-0001 and 0925-0002). Do not return the completed form to this address.

Element 1: Data Type

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

The experiments in this proposal will generate data from the following methods: quantitative PCR, florescent microscopy, and behavior. Pain behavioral data from 576 penk-IRES-cre mice will be video recorded and analyzed and averaged for 8 subjects per condition. Gene expression (qPCR) experiments will be run in triplicate for each brain region from 12 mice. Fluorescent imaging data will be acquired for 600 mice to verify injection sites and label neuronal projections. Most experiments will generate a modest amount of data, under 1GB, except for the imaging will likely generate 500GB. We expect to generate videos (MP4) and images (tif). Raw gene expression and behavioral data will be analyzed to generate spreadsheet files (csv) for statistical analysis

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

Imaging data will be generated to map the enkephalin containing neurons projecting the periaqueductal gray. This data will be preserved in the form of images and spreadsheet to count cells from particular brain regions. All data will be preserved in spreadsheets and will available to share upon request.

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

Each animal is given an animal number and cage number and all data linked to that animal will use that information in the file number or within the spreadsheet. The spreadsheet will contain all identifying information (i.e. number, drug treatment, corresponding experiment, etc) as well as any instrument settings, antibodies, or other important experimental conditions.

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

Images will be collected and stored as tiff which easily accessible by many software including ImageJ.

Element 3: Standards:

Data will be store in common and open formats (tiff and csv) and information regarding methods, definition of variables, software used will be made available as PDF files.

Element 4: Data Preservation, Access, and Associated Timelines

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

Brain imaging data with corresponding metadata will be deposited in the Brain Image Library supported by various NIH institutes including NIDA

B. How scientific data will be findable and identifiable:

The imaging data will be uploaded as tiff files for each animal coded with the metadata that also includes PI name, project name, and funding information. The repository is supported by Biomedical Applications group at the Pittsburgh Supercomputing center and the Center for Biological Imaging.

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

All scientific data will be made available upon publication and will be preserved and shared for a minimum of 10 years after the funding period.

Element 5: Access, Distribution, or Reuse Considerations

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

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

B. Whether access to scientific data will be controlled:

Scientific data will be controlled until publication and then will be made freely available.

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

There are no human subjects

Element 6: Oversight of Data Management and Sharing:

The PI – Erin N Bobeck, ORCID:0000-0001-8421-883X – will be responsible for the oversight of lab data management activities and data sharing