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Novel Hamster Models of Chikungunya Viral Arthritis

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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. 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:

Data will be generated using the following methods: human and hamster cell cultures, Southern/Northern blot, qPCR, light and fluorescent microscopy, luminescent assay, western blot, ELISA, DMPK, huNTCP-hamster genotyping, and antiviral efficacy test in huNTCP hamster. Biological data will be collected from experiments in at least biological triplicates with technical triplicates each. The total size of the data collected is projected to be no more than 1 TB.

Data from *in vitro* antiviral assays: viral DNA/RNA and antigen titers.

Data from huNTCP hamster genotyping: PCR-RFLP, sanger sequencing.

Data from drug PK profiling include hamster plasma concentration curve (AUC), maximum attainable plasma concentration (C_{max}), time at which C_{max} is reached (T_{max}), volume of distribution (V_d), total body clearance (CL), and the elimination half-life ($t_{1/2}$).

Data from *in vivo* antiviral efficacy study in huNTCP hamsters include viral DNA/RNA and antigen titers in blood and liver tissues, serum ALT and HBsAb, liver section histology, animal weight and mortality.

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

All scientific data including raw/measured and derived data (as described in Element 1A) will be preserved and shared, for the purposes of reproducibility and reusability. High quality raw data may also be provided in supporting information during publication.

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

In addition to a detailed Materials & Methods section for publications associated with this work, we will provide a detailed step-by-step protocol as a Supplementary Protocol document and maintain active protocols for each technology and workflow. In addition, we will publish new useful protocols and methods in protocol journals and books, and online protocols databases. The protocols should include all the details of the reagents, equipment, experiment procedure, and troubleshooting suggestions.

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

GrapPad Prism is used to plot assay quantitative results; QuantityOne and ImageJ are used to analyze Southern/Northern blot and microscopic images; CorelDraw and Illustrator are used to prepare figures for presentations and publications. No new software or code will be developed in this project.

Element 3: Standards:

In accordance with FAIR Principles for data, we will use open file formats (e.g. JPEG, MP4, 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), International Chemical Identifier (InChI) for chemicals, and DOIs for protocols using protocols. Nucleotide and peptide sequence data will be stored in standard formats FASTQ and FASTA, respectively.

Element 4: Data Preservation, Access, and Associated Timelines

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

We will release datasets associated with the huNTCP hamster HBV infection model proposed in the application once the animal model is established, initial analysis performed, and intellectual property secured, at which point data will be released along with a preprint prior to formal manuscript submission. No large dataset such as NGS and Mass Spec data will be generated from the proposed research.

B. How scientific data will be findable and identifiable:

Persistent Unique Identifiers (PIDs) to improve data identity and findability across all dissemination outputs, such as ORCID iDs for authors, DOIs for preprints and publications. The data deposited in online repository/database such as NCBI will be assigned a unique accession number.

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

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, whichever comes first. Once published, the publisher controls the duration of publications. The duration of preservation and sharing of the data will be 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 restrictions on subsequent access, distribution, or reuse of the scientific data from this project.

B. Whether access to scientific data will be controlled:

Data will be open-access and available publicly after patent filing and publication.

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

Not applicable as this project does not have human research participants.

Element 6: Oversight of Data Management and Sharing:

The Principal Investigators (PIs: Wang (contact), Guo) will oversee the management and sharing of data during the study process to ensure that data collection, management, submission to the repositories/database, preprint archive, and journal occur in a manner compliant with this Data Management and Sharing Plan.