Fall 9-19-2024

Effect of Cytoplasmic Polyadenylation Element Protein Overexpression on the Development of Bovine Cloned Embryos

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Data Management Plan

Expected Data Type and Format

1) Physical data will be comprised of RNA and cDNA smaples for gene expression and RNA sequencing. For short-term storage, RNA and cDNA will be stored at -20°C. For long-term storage, the samples will be stored at -80°C freezers for a minimum of 5 years after publication of the results.
2) Electronic data: the main types of data will be:
    a) Gene expression data will be acquired by the Real-Time PCR as a .csv file and processed data will be in the format of a Microsoft Excel file.
    b) RNA sequencing data will be acquired in a .fastq format using the NextSeq Sequencer (Illumina), will be mapped and aligned, and will be processed using Trinity, TopHat2, and edgeR software packages by the Utah State University Bioinformatics team. Processed data (differentially expressed genes and fold changes) will be sent to the PD in a Microsoft Excel file format.
3) All other data (laboratory notes, protocols, sample collection information) will be stored as Microsoft Word and Excel files. Paper notes such as field and laboratory notes will be typed into Microsoft Word and Excel files and will be scanned weekly and stored as an Adobe PDF file. All statistical analysis data will be stored in Microsoft Word and Excel. All data will be converted to .txt and .csv file formats for long term interoperability when appropriate.

Data Storage and Preservation

All data, whether in electronic or paper form, will be properly named and organized by recording date. All raw, processed and analyzed electronic data will be archived in triplicate. One copy will be archieved in the PD computer system, which is backed up to the cloud service box.com used by Utah State University. A second copy will be kept in an external hard drive. A third copy will be deposited and archived in a subject specific data repository and/or in Utah State University's institutional repository, Digital Commons. DigitalCommons@USU supports all the file types and formats. Files are provided with persistent URLs, and if needed, a DOI. All files are backed up at multiple sites, including cloud storage.

Physical data (paper form) will be archived on-site in the Department of Animal, Dairy and Veterinary Sciences and scanned copies will be kept in Box.com and in Utah State University's institutional repository, Digital Commons.

Raw, processed and analyzed data will be kept for a minimum of 5 years after publication.

Data Sharing and Public Access

Data to support publication will be made available at the time of article publication. After final publications associated with the grant proposal are completed any remaining data will be made available in appropriate data repositories.
We will make the results of our work available to the scientific community through timely peer-reviewed publications and professional meeting presentations. Our budget contains publication and travel funds that will cover the costs of publication and oral and poster presentations at

professional venues like the Society of Study in Reproduction (SSR) and International Embryo Technology Society (IETS). This travel will be funded also from other sources, Utah Agriculture Experimental Station (UEAS).

Roles and Responsibilities

Drs. Liu and Polejaeva (PD and Co-PD) will be responsible for the implementation and monitoring of the data management plan. They will make sure all data are deposited in the appropriate sites. In case someone leaves their research group before the completion of the proposed studies, Drs. Liu and Polejaeva will be responsible for collecting and verifying that all data in that person's possession is appropriately identified, stored and accessible. They will also reassign the responsibility for that data to another laboratory member. Each student and laboratory technician will be responsible for properly naming, storing and recording their data. All data will be made available weekly at Box.com. Monthly meetings will be held to assure that data management practices are followed and data is being shared.

Monitoring and Reporting

Funded project will be subjected to this DMP and compliance will be monitored throughout the duration of the project until all data is processed and deposited. The implementation of the DMP will be reported to NIFA through REEport and will include data sharing activities such as publications, presentations to conferences, and progress on storage activities.