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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 28875-2012

Space science experiments - Requirements for biological samples

空间科学实验 生物样品要求

Issued on: November 5, 2012 **Implemented on: February 15, 2013**

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Standardization Administration of the PRC

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard and its application by the National Standardization Technical Committee on Space Sciences (SAC/TC312) centralized. This standard was drafted. Institute of Biophysics, Chinese Academy of Sciences, Chinese Academy of Space Technology and Application Engineering Center, Chinese Academy of Sciences Institute of Genetics and Developmental, Shanghai Institute of Plant Physiology and Ecology Chinese Academy of Sciences, Institute of Botany, Institute of Zoology Institute, Wuhan Institute of Hydrobiology, Chinese Academy of Sciences, Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Dalian Maritime University, Beijing Aerospace University days. The main drafters of this standard. warehouse Huai Xing Jiang Pi Dong, Guo Jiong, Liu Min, Cai Weiming, Wen Xiaogang, paragraph Enkui, Wanggao Hong, Zhang Tao, Sun Ye Qing, Ronglong.

Carried out using space microgravity, radiation, vacuum, circadian rhythm, the magnetic field changes and other resources experimental study biology in determining Branch After learning objectives need to experiment and experimental methods to achieve the object, and the final implementation of the space laboratory equipment and research object (sample). biological Experimental sample life science experiments and vector objects. A wide range of biological test sample, vary widely, including biological macromolecules, cells, groups Tissues, organs, individuals or groups of animals, plants or individual communities, individual or microbial communities and the like. Given the scarcity of space experiments and high opportunity Experimental cost, based on common standards and reasonable selection, management and biological samples in order to ensure its quality, help to improve the success of experimental studies Rate, achieve scientific objectives expected. Space Experiment biological sample scientific requirements

1 Scope

China's national requirements for the biological samples used in space science experiments. It specifies the requirements that a biological sample must meet to be flown and studied in a space experiment, covering its selection, its characterisation, its preparation, its containment and its handling before and after flight. Space biology uses the

environment rather than an apparatus: microgravity, radiation, vacuum, altered circadian cues and a changed magnetic field are the experimental conditions, and none of them can be reproduced together on the ground. Once the scientific objective is set, the experiment is realised through the method, the equipment flown, and the object being studied - and the sample is that object. It is also the component with the least margin. The experiment flies once, on a date fixed by a launch campaign rather than by biology. The sample has to be alive, in a defined state, at that moment, after transport to the site, integration into the payload, a hold that may be extended without warning, and the launch itself. It must survive in a container that is sealed, that supplies whatever it needs, and that contains it absolutely - a biological sample that escapes on a crewed vehicle is a safety problem, not an experimental one. And the state it was in before flight has to be documented well enough that a difference measured afterwards can be attributed to spaceflight rather than to the handling. So the standard covers the selection and genetic and physiological characterisation of the sample, its preparation and synchronisation, the ground control, the containment and its biosafety, the transport and storage before launch, the conditions during flight, and the recovery and preservation afterwards. Issued on 5 November 2012 and in force since 15 February 2013.

This standard specifies the space life science experiments using the scientific connotation of a biological sample, security, reliability, and adaptability and inspection means Principles of measurement evaluation, content and methods. This standard applies to a variety of life science experiments on the spacecraft implementation used in the selection and management of biological samples.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB 13690 chemical classification and hazard communication General

GB/T 14926 (all parts) experimental animals (detection)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Biological samples biologicalsample As space life science subjects biologically active material.

Note. The biological samples include biological communities, individuals, biological tissues, cells and biological molecules, they maintained a characteristic structure of living matter in a certain level And (or) functional traits.

3.1.1 Preselected sample pre-selectedsample Intended as a scientific experiment in biological samples for scientific research objectives.

3.1.2 Primary sample preliminarysample After a preliminary screening of Foundation research and experiment with hardware to match the inspection test biological sample.

3.1.3 Candidate samples candidatesample After confirming in the primaries on the basis of full compliance with the biological sample experimental conditions.

3.1.4 Flight sample flightsample Participate in a biological sample space experiment.

3.1.5 Alternative sample alternativesample In each sample stage, when individual samples due to unexpected reasons quit to supplement vacancies biological samples.