

ICS 7.1
CCS C 53



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 15193.17-2015

Replacing GB 15193.17-2003

**National food safety standard -- Chronic toxicity and
carcinogenicity combination test**

食品安全国家标准 慢性毒性和致癌合并试验

(English Translation)

Issued on: August 7, 2015

Implemented on: October 7, 2015

**Issued by: National Health and Family Planning Commission of the
People's Republic of China**

Table of Contents

Foreword
1 Scope
2 Terms and definitions
2.1 Chronic toxicity
2.2 Carcinogenicity
2.3 No observed adverse effect level
2.4 Minimum observed adverse effect level
2.5 Target organ
2.7 Satellite Group
3 Test purposes and principles
4 Instruments and reagents
4.1 Instruments and equipment
4.2 Reagents
5 Test methods
5.1 Test substance
5.2 Experimental Animals
5.4 Test period
5.5 Test procedure and outcome measures
6 Data processing and evaluation of results
6.1 Data Processing
6.2 Evaluation Results
7 Report
8 Explanation, trial

Foreword

This standard replaces GB 15193.17-2003 "chronic toxicity and carcinogenicity studies."
this standard compared with GB 15193.17-2003, the main changes are as follows.

- Standard name was changed to "national food safety standards combined chronic toxicity and carcinogenicity tests";
- Modify and adjust the overall style structure;
- Modify the scope of the standard;

- Increase the "minimum observed adverse effect level", "maximum tolerated dose" and "satellite group" of terms and definitions, modify the "Maximum no observed adverse effect level", "chronic toxicity", "cancer" and "target organ" of terms and definitions;
- Modified for experimental purposes and principles of representation;
- Added "instruments and reagents" content;
- Changed to "experimental animals" requirements, increase the "animal preparation" and "animal husbandry" content;
- Modify the "dose group and" requirements;
- Increasing the test substance by gavage, the incorporation of the specific requirements of a given feed or water;
- Modified "test period" content;
- Modify the test outcome measures (general observation, hematology, blood biochemistry, pathology) requirements, weight gain, Food intake and water intake, eye examination, urinalysis and other indicators of content;
- Deleted "data collection" content;
- Modify the "data processing" content added "results of the evaluation" content;
- Modifications and additions for the test reporting requirements;
- Added "explained test" content.

National Food Safety Standard Combined chronic toxicity and carcinogenicity tests

1 Scope

This standard specifies the basic technical requirements and test methods for chronic toxicity and carcinogenicity tests combined.

This standard applies to the evaluation of the test substance chronic toxicity and carcinogenic effects.

2.1 Chronic toxicity

Experimental animals after long-term toxic effects of repeated administration of the test substance caused.

2.2 Carcinogenicity

Experimental animals after long-term repeated administration of the test substance caused tumors (benign and malignant) lesions.

2.3 No observed adverse effect level

Through animal experiments, the existing technical means and detection index was not observed any of the test substance-related toxic effects maximum dose.

2.4 Minimum observed adverse effect level

Under specified conditions, the test substance causing a minimal effect dose animal tissue morphology, function, growth and development, and other harmful effects.

2.5 Target organ

Organ by the test substance caused significant toxic effects of experimental animals.

2.6 The maximum tolerated dose from 90 days oral toxicity test to determine the dose, this dose should be less than 10% weight loss in the animals in the control group, and are not generated by Non-tumor factors caused death and lead to shortened life or pathological signs of poisoning injuries.

2.7 Satellite Group

Toxicity of the design and implementation of the additional group of animals, animal handling and feeding conditions and its main research similar to the test medium or Test convalescence observation and testing can also be used to observe and testing does not include other indicators and parameters in the main study.

3 Test purposes and principles

OK during most of the life of experimental animals, orally administered repeated chronic toxicity and carcinogenic effects caused by the test substance, the test substance Learn Chronic toxicity dose - response relationship between tumor incidence, the target organ, the nature of the tumor, the tumor occurrence time and the number of tumors per animal, determined slow Toxicity was not observed adverse effect level (NOAEL) and the minimum observed adverse effect level (LOAEL), for predicting the human exposure Chronic toxicity and carcinogenicity test substance and the final assessment of whether the test was to provide the basis for the food.

4.1 Instruments and equipment

Anatomy of commonly used laboratory equipment, animal scales, electronic scales, biological microscope, biochemical analyzer, hematology analyzer, blood coagulation analyzer Instrument, urine analyzers, centrifuges, slicing machines.

4.2 Reagents

Formaldehyde, xylene, ethanol, hematoxylin-eosin, paraffin, blood dilution, chemical and biological reagents, analytical reagents coagulation, urinalysis reagent.

5.1 Test substance

The test substance should be used in the original sample, if it can not use the original sample, the test should be treated in accordance with the principles of the test substance for proper disposal. will Test was incorporated into feed, drinking water or gavage administration.

5.2.1 Animal selection

Experimental animals should be selected in line with national standards and regulations (GB 14923, GB 14922.1, GB 14922.2). Should be selected from tumor Low fat animal species and strains of rats preferred, generally weeks 6 weeks to 8 weeks. Start of the test animals of each sex should not exceed the weight difference $\pm 20\%$ over the average weight. At least 120 the number of animals in each group (including chronic toxicity tests 20, carcinogenicity test 100), male and female, it should be non-parous female rats, non-pregnant rats. If you plan to test interim necropsy or chronic toxicity testing end of the observation made convalescence (for satellite), should be increased Plus the number of animals (n = interim necropsy at least 20, male and female, chronic toxicity test period is usually 12 months, the data can be used as carcinogenic test Interim necropsy data transcendent; satellite group is usually only increased in the control group and high-dose groups of at least 20, male and female). Animals of the control group Do the test substance and the number should be the same group.

5.2.2 Animal Preparation

Before the test, animals in the experimental animal room should be at least 3d ~ 5d acclimatization and quarantine observation.

5.2.3 Animal Feeding

Animal feeding conditions, drinking water, feed should be in line with national standards and regulations (GB 14925, GB 5749, GB 14924.1, GB 14924.2, GB 14924.3). During the test animals free access to water and food, according to the component group sex feeding cage, cage number of animals (per general no more than three) shall meet the minimum space required for experimental animals in order not to affect the free movement of animals and the animals were observed for signs appropriate. Trial period Between each non-animal test should be less than 10% of mortality, dying animal blood biochemical tests should be carried out as far as possible, as well as gross anatomy Histopathological examination of