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

GB/T 27827-2011

Chemicals -- Test method of in vivo sister chromatid exchange

化学品 体内姊妹染色单体交换试验方法

(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard and the US Environmental Protection Agency (UnitedStatesEnvironmentalProtectionAgency, USEPA) prevention, pesticides and Office of Toxic Substances (theOfficeofPrevention, PesticidesandToxicSubstances, OPPTS) of OPPTS870.

5915.1998 "in vivo sister chromatid exchange test" match (in English) of technical content.

This standard configuration and do the following editorial changes.

- Increasing the range a chapter;
- The original text of the "Introduction" section of this standard as "Introduction";
- The original "definition" as part of the content of this standard "2 Terms and Definitions";
- A unit of measurement unity to our legal units of measurement.

This standard is managed by the National Standardization Technical Committee chemicals dangerous (SAC/TC251) and focal points.

This standard was drafted. Chinese Center for Disease Prevention and Control of Occupational Health and Poison Control, Occupational Disease Prevention Hospital in Liaoning Province, China Chemical Industry Technology Development Center, Chinese Academy of Inspection and Quarantine.

Introduction

This standard reference USEPAOPPTS870.5915.1998 in vivo sister chromatid exchange test (in English), and the technical content it is consistent. The test guide is the US Environmental Protection Agency (EPA) prevention, pesticides and toxic substances

Prevention Office (theOfficeofPre-One series of tests guide vention, PesticidesandToxicSubstances, OPPTS) published for the subjects' Pesticides and Toxic Substance; toxicological data obtained after the submission for review in accordance with EPA regulations. The test guidelines published by OPPTS Mergers and weigh a plurality of test guidelines [including pollution prevention and toxic substances office (theOfficeofPolutionPreventionand Toxics, OPPT) guidelines issued by the US specification Encyclopedia I, Chapter R sub-chapter in the guide under the heading 40 (Title40, ChapterI, SubchapterRoftheCodeofFederalRegulations, CFR), pesticides Planning Office (theOfficeof PesticidePrograms, OPP), the Organization for Economic Cooperation and Development (theOrganizationforEconomicCooperationandDe-velopment, OECD) guidelines a coordinated] after the final formation.

Integration of multiple purpose test guidelines to form a single set of guidelines OPPTS test is to test the number of US Environmental Protection Agency reached According to requirements, so that differences in test methods is reduced to a minimum.

Applicability. To meet the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA) to Seeking formulated guidelines.

Background Information. The OPPTS develop guidelines for testing the synchronization reference information includes. OPPT40CFR798.5915 vivo sisters Chromatid exchange test and OPP84-2 mutagenicity test (F Pesticide Assessment Guidelines section, hazard evaluation; and livestock) US Environmental Protection Department report 540/09-82-025,1982.

The ability to test for detection of chemicals to increase the replication of chromosomal DNA of two sister chromatid exchange Sister chromatid exchange.

Cultured mammalian cells can be used in vitro tests, also use non-mammalian or mammalian tissue in vivo tests. Most Using a mammal (e.g. mouse, rat, hamster) lymphocytes and bone marrow cells, human lymphocytes may also be used.

Chemicals in vivo sister chromatid exchange experiment method

1 Scope

This standard specifies the chemical test methods for in vivo sister chromatid exchange terms and definitions, test principle, test methods, test number and, according to the report.

This standard applies to chemicals in vivo sister chromatid exchange tests.

2 Terms and definitions

The following terms and definitions apply to this document.

Sister chromatid exchange, SCE Two single chromatid exchange chromosome replication in

cell division. In the mid-phase of the cell cycle can be observed in this post Change, it may take a DNA double helix of the DNA fragments, transfer and connectivity.

3 Test principle

Animals were given test substance exposure through appropriate means, then give bromo-deoxyuridine (bromodeoxyuridine, BrdU). move the former was killed with a spindle inhibitor (colchicine or colchicine) treatment, blocking cell division in metaphase. After the animals were euthanized Remove the subject tissue, the preparation of tissue samples examined, after staining SCE counted under a microscope to analyze.

Test Method 4

4.1.1 Germline

Any suitable mammalian germline can be used. There are commonly used rodent mice, rats and hamsters.

4.1.2 Age

Use healthy young adult animals.

4.1.3 Number and sex

Each exposure group and control group, at least 10 animals, five male and a female. Such as the use of single-sex or a different number of animals should be provided appropriate reason.

4.1.4 Packet

It should be exposed experimental animals were randomly divided into two groups.