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

GB/T 27821-2011

Chemicals -- Bacterial DNA damage or repair test

化学品 细菌DNA损伤或修复试验方法

(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 OPPTS 870.5500.1998 bacterial DNA (deoxyribonucleic acid) damage or repair test (Healtheffecttestguidelines-Bacterial DNAdamageorrepairtests) agreement (in English) of technical content.

This standard configuration and do the following editorial changes.

- The introductory part to the introduction;
- Increasing the range chapter (see Chapter 1).

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.

Introduction

This standard reference USEPAOPPTS870.5500.1998 bacterial DNA (deoxyribonucleic acid) damage or repair test ((English Version). The guide is the United States Environmental Protection Agency (UnitedStatesEnvironmentalProtectionAgency, USEPA) Prevention, Pesticides and the Office of Toxic Substances (theOfficeofPrevention, PesticidesandToxicSubstances, OPPTS) developed for evaluation Pesticides and other toxic substances, one of a series of safety testing guidelines. Is OPPTS integration testing guidelines and requirements of the relevant departments three and ultimately the formation of three test instructions are based on the relevant departments of the United States Code

of Federal Regulations (Code of Federal Regulations, Title Pollution prevention and toxic substances office 40), the first chapter of Part R (the Office of Pollution Prevention and Toxics, OPPT) developed test guidelines and requirements, published by the US National Intelligence Agency (the National Technical Information Service, NTIS) Pesticide Planning Office (the Office of Pesticide Programs, OPP) testing guidelines and requirements, and the World Economic Cooperation and Development Organization (the Organization for Economic Cooperation and Development, OECD) testing guidelines published.

Based on the Toxic Substances Control Regulations (the Toxic Substances Control Act, 15 U.S.C. 2601) and the Federal Insecticide, Fungicide Agents and agents to kill rodents and regulations (the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 136, et seq.), in order to meet the requirements of the test data, USEPA sets guidelines to integrate and form a final OPPTS testing guidelines, to reduce Low differences caused different test procedures.

Chemical or bacterial DNA damage repair test methods

1 Scope

This standard specifies the test principle chemical injury or bacterial DNA repair test, test methods, test procedures and test data and report.

This standard applies to chemical or bacterial DNA damage repair test.

2 Test principle

Bacterial DNA damage or repair test can be used to test DNA damage repair in a healthy bacteria strains and repair defects Strain test, repair deficient strain of cell death and growth inhibition in different manifestations. The test itself is not used to measure the mutation events, but Through interaction with the test substance detection detect genetic material of its genotoxicity. By detecting sound repair strains and lack of repair Trap strains exhibit different growth inhibition test chemicals to repair healthy wild-type strain and repair defects projections Variant strains of different cell death induced effect. Repair deficient mutant strain is usually one or more regulatory DNA damage repair Enzyme deficient strain.

This test method can be used to detect whether chemicals can react with cellular DNA leads to inhibition of cell growth or cause death action. Chemistry Interaction with DNA products can be identified by specific cell repair system. The method of selecting a specific DNA repair genes intact and lack One pair of strain trap, since DNA repair-deficient strain can not repair DNA damage caused by a chemical, its performance tends to cells it tends to growth inhibition or death.

Reference substance present methods include, but are not limited to chloramphenicol

(chloramphenicol) and methyl methanesulfonate (methylnmethanesul-fonate).

Test Method 3

3.1 Method of selection

Different methods can be used to test the method should use the following two methods.

- a) tests carried out on a solid substrate (diffusion test);
- b) in the liquid phase of tests conducted on the substrate (suspension test).

3.2.1 Common strain

Should choose coli (EscherichiacolipolA, W3110/p3478) and Bacillus subtilis (Bacillussubtilisrec, H17 /M45). Alternatively other strains.

3.2.2 Strain preparation and preservation

Strains preservation solution preparation and preservation, growth conditions, identification and verification of the desired phenotype strains and other microorganisms should adopt good test Test methods, and should be documented.