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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 15670.22-2017

Toxicological test methods for pesticides registration - Part 22:DNA damage and repair/unscheduled DNA synthesis in mammalian cells in vitro

农药登记毒理学试验方法 第22部分：体外哺乳动物细胞DNA损害与修复/程序外DNA合成试验

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Foreword

GB/T 15670 "pesticide registration toxicology test method" is divided into the following sections.

--- Part 1. General principles;

--- Part 2. Acute oral toxicity test Horn's method;

--- Part 3. Acute oral toxicity test sequential method;

--- Part 4. Acute oral toxicity test probability unit method;

--- Part 5. Acute dermal toxicity test;

--- Part 6. Acute inhalation toxicity test;

--- Part 7. Skin irritation/corrosivity test;

--- Part 8. Acute eye irritation/corrosiveness test;

--- Part 9. Skin allergy (sensitization) test;

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--- Part 11. Short-term repeated transdermal (28 days) toxicity test;

--- Part 12. Short-term repeated inhalation exposure (28 days) toxicity test;

--- Part 13. Subchronic toxicity test;

1 Scope

GB/T 15670.22-2017 is the Chinese national standard on toxicological test methods for pesticides registration - part 22:dna damage and repair/unscheduled dna synthesis in mammalian cells in vitro, in the field of agriculture. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 12 July 2017 by the General Administration of Quality Supervision,

Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2018. Classification: ICS 65.100, CCS B17. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

GB/T 15670 provisions of this part of the in vitro mammalian DNA damage and repair/extra-procedural DNA synthesis test basic Principles, methods and requirements. This section applies to the registration of pesticides in vitro mammalian cells DNA damage and repair/extra-procedural DNA synthesis test.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1 Out-of-procedure DNA synthesis unscheduledDNAsynthesis; UDS Occurs in the S phase of the cell cycle to retain DNA synthesis beyond DNA synthesis.

2.2 Net nuclear silver netnucleargrain; NNG Quantitative determination of intracellular UDS activity in autoradiographic UDS assays was calculated as the number of nuclei (NG) minus the area of the nucleus Average cytoplasmic silver (CG), ie NNG = NG-CG. The number of NNGs is calculated from each cell, followed by one culture or parallel culture The cells in the NNG are aggregated.

3 Test purposes

The test system is based on the detection of the level of DNA repair synthesis to evaluate whether the test substance on the original mammalian cells and has been established Of mammalian cell lines cause damage and damage to DNA. As UDS reflects the injury resection and repair process, and reflects the loss The extent of the injury, it can be used as short-term chemical carcinogens to determine the end of biological tests.

4 Test Overview

The isolated and cultured non-S mammalian cells were transferred to a culture flask containing thymidine (3H-TdR) and a test substance and incubated After a certain period of time, observed 3H-TdR incorporation, if the test substance caused cell DNA damage, will inevitably lead to cell autonomous DNA Repair, integration of 3H-TdR into the DNA strand during repair, resulting in the incorporation of 3H-TdR into the repaired DNA. Reuse radioactive self Development or liquid scintillation counting method to observe the incorporation of 3H-TdR amount, more incorporation, indicating that the test substance damage to DNA more widely. Unless primary hepatocytes are used as target cells, cultured mammalian cells are treated with and without exogenous metabolic activation system

Under the situation with the test substance role. In view of the primary culture of liver cells exist easily isolated culture, retention of liver microsomes and other advantages, it is recommended to use primary cultured hepatocytes as a test