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**Traditional Chinese medicine —  
Detection of irradiated natural  
products by photostimulated  
luminescence**

*Médecine traditionnelle chinoise — Détection des produits naturels  
irradiés par luminescence photostimulée*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 249, *Traditional Chinese medicine*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Ionizing radiation (gamma ray, X-ray or beam) is used extensively for the sterilization of medical devices and for a variety of other materials and products. However, irradiation of traditional natural products for sanitation purposes is not permitted by the regulations of most countries. It is necessary to set up a method to identify whether a product has been subjected to irradiation, because overexposure to irradiation can have negative effects on product quality. Irradiation detection methods will help to reduce international trade friction, assist governments in strengthening irradiation supervision and help enterprises to choose non-irradiated raw materials.

Currently, several independent methods are used to identify irradiated foodstuffs. Some of them can be used to identify irradiated natural products. After studying natural products and improving detection rules, photostimulated luminescence (PSL) has become one of the most suitable methods of detection. It is not only a screening method but also a confirmation method with application of F-factor. It can be used widely because of its simplicity and low cost.



# Traditional Chinese medicine — Detection of irradiated natural products by photostimulated luminescence

## 1 Scope

This document specifies a method using photostimulated luminescence (PSL) to detect the radiation status of natural products. It can be used to identify whether raw and traditionally processed Chinese medicinal materials and solid forms of manufactured product made from these materials have been irradiated by ionizing radiation (gamma, X-ray or beam). It is not applicable for use in testing liquid dosage forms or partially solid extracted dosage forms that do not contain directly crushed medicinal materials.

## 2 Normative reference

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1 photostimulated luminescence PSL

radiation-specific phenomenon resulting from energy stored by trapped charge carriers

Note 1 to entry: Release of this stored energy by optical stimulation can result in a detectable luminescence signal.

[SOURCE: EN 13751:2009, 2.1]

### 3.2 PSL intensity

amount of light detected during photostimulation, in photon count rate

[SOURCE: EN 13751:2009, 2.2]

### 3.3 screening PSL

*PSL intensity* (3.2) recorded from the sample as received or following preparation

[SOURCE: EN 13751:2009, 2.3]

### 3.4 calibrated PSL

*PSL intensity* (3.2) recorded from the test sample following irradiation to a known dose, after initial PSL measurement

[SOURCE: EN 13751:2009, 2.4]