

Microbiology of food and animal feeding stuffs - Real-time polymerase chain reaction (PCR) for the detection of food-borne pathogens - General requirements and definitions (ISO 22119:2011)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 22119:2011 sisaldab Euroopa standardi EN ISO 22119:2011 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 29.07.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.07.2011.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 22119:2011 consists of the English text of the European standard EN ISO 22119:2011.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 29.07.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 15.07.2011.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English Version

Microbiology of food and animal feeding stuffs - Real-time polymerase chain reaction (PCR) for the detection of food-borne pathogens - General requirements and definitions (ISO 22119:2011)

Microbiologie des aliments - Réaction de polymérisation en chaîne (PCR) en temps réel pour la détection des micro-organismes pathogènes dans les aliments - Exigences générales et définitions (ISO 22119:2011)

Mikrobiologie von Lebensmitteln und Futtermitteln - Real-time-Polymerase-Kettenreaktion (PCR) zum Nachweis von pathogenen Mikroorganismen in Lebensmitteln - Allgemeine Anforderungen und Begriffe (ISO 22119:2011)

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Foreword

This document (EN ISO 22119:2011) has been prepared by Technical Committee CEN/TC 275 "Food analysis - Horizontal methods", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 34 "Food products".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Introduction

The polymerase chain reaction (PCR) has been shown to be a fast, sensitive, and specific method for detection of food-borne pathogens. Further developments of the technology allow the detection of specific PCR products generated by the amplification process. The principle relies on the excitation of fluorescent markers during the PCR process.

This International Standard is part of a series of documents under the general title *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens*:

ISO/TS 20836, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — Performance testing for thermal cyclers*

ISO 20837, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — Requirements for sample preparation for qualitative detection*

ISO 20838, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — Requirements for amplification and detection for qualitative methods*

ISO 22118, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection and quantification of food-borne pathogens — Performance characteristics*

ISO 22119, *Microbiology of food and animal feeding stuffs — Real-time polymerase chain reaction (PCR) for the detection of food-borne pathogens — General requirements and definitions*

ISO 22174, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — General requirements and definitions*

The following Technical Specification is in preparation:

ISO/TS 13136, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Shiga toxin-producing Escherichia coli (STEC) belonging to O157, O111, O26, O103 and O145 serogroups — Qualitative real-time polymerase chain reaction (PCR)-based method*

Microbiology of food and animal feeding stuffs — Real-time polymerase chain reaction (PCR) for the detection of food-borne pathogens — General requirements and definitions

1 Scope

This International Standard defines terms for the detection of food-borne pathogens in foodstuffs, and isolates obtained from them, using the polymerase chain reaction (PCR). This International Standard also specifies requirements for the amplification and detection of nucleic acid sequences (DNA or RNA after reverse transcription) by real-time PCR.

The minimum requirements laid down in this International Standard provide the basis for comparable and reproducible results within individual and between different laboratories.

This International Standard is also applicable, for example, to the detection of food-borne pathogens in environmental samples and in animal feeding stuffs.

NOTE Because of the rapid progress in this field, the examples given are those most frequently in use at the time of development of this International Standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20838, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — Requirements for amplification and detection for qualitative methods*

ISO 22174:2005, *Microbiology of food and animal feeding stuffs — Polymerase chain reaction (PCR) for the detection of food-borne pathogens — General requirements and definitions*

3 Terms and definitions

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

3.1

real-time polymerase chain reaction

real-time PCR

enzymatic procedure which combines the *in vitro* amplification of specific DNA segments by a process of denaturation, annealing of specific primers, and synthesis of DNA with the detection of specific PCR products during the amplification process

NOTE 1 Generally, the amplification reaction mixture contains one or more specific DNA probes coupled with one or more fluorescent dyes. Using this technology, the signal is generated after specific hybridization of the probes to the target nucleic acid sequence and excitation with light of a definite wavelength.