
Mikrobiologija v prehranski verigi - Metode ugotavljanja prisotnosti ličink Anisakidae L3 v ribah in ribjih proizvodih – 2. del: Metoda umetne prebave (ISO 23036-2:2021)

Microbiology of the food chain - Methods for the detection of Anisakidae L3 larvae in fish and fishery products - Part 2: Artificial digestion method (ISO 23036-2:2021)

Mikrobiologie der Lebensmittelkette - Verfahren zum Nachweis von Anisakidae L3-Larven in Fisch und Fischereierzeugnissen - Teil 2: Verfahren der künstlichen Verdauung (ISO 23036-2:2021)

Microbiologie de la chaîne alimentaire - Méthodes de recherche des larves L3 d'Anisakidae dans les poissons et produits de la pêche - Partie 2: Méthode de digestion artificielle (ISO 23036-2:2021)

Ta slovenski standard je istoveten z: EN ISO 23036-2:2021

ICS:

07.100.30	Mikrobiologija živil	Food microbiology
67.120.30	Ribe in ribji proizvodi	Fish and fishery products

SIST EN ISO 23036-2:2021 en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 23036-2

May 2021

ICS 07.100.30

English Version

Microbiology of the food chain - Methods for the detection of Anisakidae L3 larvae in fish and fishery products - Part 2: Artificial digestion method (ISO 23036-2:2021)

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European foreword

This document (EN ISO 23036-2:2021) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 463 "Microbiology of the food chain" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by November 2021, and conflicting national standards shall be withdrawn at the latest by November 2021.

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INTERNATIONAL
STANDARDISO
23036-2First edition
2021-04

**Microbiology of the food chain —
Methods for the detection of
Anisakidae L3 larvae in fish and
fishery products —**

Part 2:

Artificial digestion method

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larves L3 d'Anisakidae dans les poissons et produits de la pêche —*

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Reference number
ISO 23036-2:2021(E)

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Published in Switzerland

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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.

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 275, *Food analysis — Horizontal methods*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 23036 series can be found on the ISO website.

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.

Introduction

Nematodes of the Anisakidae family have a complex life cycle involving a high number of hosts. Adult stages of Anisakidae reside in the stomach of marine mammals, where they are embedded in the mucosa. Unembryonated eggs produced by adult females are released with the faeces of marine mammals and become embryonated in seawater, where first-stage larvae (L1) develop in the eggs. The larvae moult to become free-swimming second-stage larvae (L2) and, if ingested by crustaceans, mature into third-stage larvae (L3). This stage is infective to fish and squid, and larvae are transferred between fishes through predation, maintaining the L3 stage. Some larvae migrate from the abdominal cavity into muscle tissues. Humans are incidental hosts and can be infected after ingesting raw or undercooked infected fish or cephalopods containing viable L3.

Nematodes of the family Anisakidae are the causative agents of human anisakidosis, a disease that is not only a public health hazard affecting humans, but also represents an economic problem in fishery and food safety (the term “anisakiasis”, designating the disease caused by members of the genus *Anisakis*, is also sometimes used). Worldwide, marine and wild anadromous fishes are intermediate hosts of Anisakidae, whereas marine mammals are the definitive hosts.

Visual inspection procedures for the detection of Anisakidae larvae in fish are employed to minimize the risk that contaminated fish will reach the consumer,^{[1][2]} thus preventing human anisakidosis.

The UV-press and the artificial digestion of the fish muscular tissue are the methods specifically designed to detect nematode larvae in fish and to evaluate the infestation level of a batch, and have been validated and tested in multicentre collaborative studies^[3] (see [Clause 10](#)).

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