SLOVENSKI STANDARD
SIST EN ISO 10993-3:2026

01-november-2026

Nadomešča:
SIST EN ISO 10993-3:2015

Biološko ovrednotenje medicinskih pripomočkov - 3. del: Ovrednotenje genske toksičnosti, kancerogenosti, toksičnosti za razmnoževanje in toksičnosti za razvoj (ISO 10993-3:2026)

Biological evaluation of medical devices - Part 3: Evaluation of genotoxicity, carcinogenicity, reproductive toxicity and developmental toxicity (ISO 10993-3:2026)

Biologische Beurteilung von Medizinprodukten - Teil 3: Bewertung der Genotoxizität, Karzinogenität, Reproduktionstoxizität und Entwicklungstoxizität (ISO 10993-3:2026)

Évaluation biologique des dispositifs médicaux - Partie 3: Évaluation de la génotoxicité, de la cancérogénicité, de la toxicité sur la reproduction et de la toxicité sur le développement (ISO 10993-3:2026)

Ta slovenski standard je istoveten z: **EN ISO 10993-3:2026**

ICS:

11.100.20	Biološko ovrednotenje medicinskih pripomočkov	Biological evaluation of medical devices

SIST EN ISO 10993-3:2026 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN ISO 10993-3

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ICS 11.100.20

Supersedes EN ISO 10993-3:2014

English Version

Biological evaluation of medical devices - Part 3: Evaluation of genotoxicity, carcinogenicity, reproductive toxicity and developmental toxicity (ISO 10993-3:2026)

Évaluation biologique des dispositifs médicaux - Partie 3: Évaluation de la génotoxicité, de la cancérogénicité, de la toxicité sur la reproduction et de la toxicité sur le développement (ISO 10993-3:2026)

Biologische Beurteilung von Medizinprodukten - Teil 3: Bewertung der Genotoxizität, Karzinogenität, Reproduktionstoxizität und Entwicklungstoxizität (ISO 10993-3:2026)

This European Standard was approved by CEN on 12 July 2026.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 10993-3:2026 E

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European foreword

This document (EN ISO 10993-3:2026) has been prepared by Technical Committee ISO/TC 194 "Biological and clinical evaluation of medical devices" in collaboration with Technical Committee CEN/TC 206 “Biological and clinical evaluation of medical devices” the secretariat of which is held by DIN.

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 March 2027, and conflicting national standards shall be withdrawn at the latest by March 2027.

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

This document supersedes EN ISO 10993-3:2014.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 10993-3:2026 has been approved by CEN as EN ISO 10993-3:2026 without any modification.

Annex ZA
(informative)

Relationship between this European standard and the General Safety and Performance Requirements of Regulation (EU) 2017/745 aimed to be covered

This European standard has been prepared under M/575 to provide one voluntary means of conforming to the General Safety and Performance Requirements of Regulation (EU) 2017/745 of 5 April 2017 concerning medical devices [OJ L 117] and to system or process requirements including those relating to quality management systems, risk management, post-market surveillance systems, clinical investigations, clinical evaluation or post-market clinical follow-up.

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZA.1 and application of the edition of the normatively referenced standards as given in Table ZA.2 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding General Safety and Performance Requirements of that Regulation, and associated EFTA Regulations.

Where a definition in this standard differs from a definition of the same term set out in Regulation (EU) 2017/745, the differences shall be indicated in this Annex Z. For the purpose of using this standard in support of the requirements set out in Regulation (EU) 2017/745, the definitions set out in this Regulation prevail.

Where the European standard is an adoption of an International Standard, the scope of this document can differ from the scope of the European Regulation that it supports. As the scope of the applicable regulatory requirements differ from nation to nation and region to region the standard can only support European regulatory requirements to the extent of the scope of the European Regulation for medical devices ((EU) 2017/745).

NOTE 1 Where a reference from a clause of this standard to the risk management process is made, the risk management process needs to be in compliance with Regulation (EU) 2017/745. This means that risks have to be 'reduced as far as possible', 'reduced to the lowest possible level', 'reduced as far as possible and appropriate', 'removed or reduced as far as possible', 'eliminated or reduced as far as possible', 'removed or minimized as far as possible', or 'minimized', according to the wording of the corresponding General Safety and Performance Requirement.

NOTE 2 The manufacturer's policy for determining **acceptable risk** must be in compliance with General Safety and Performance Requirements 1, 2, 3, 4, 5, 8, 9, 10, 11, 14, 16, 17, 18, 19, 20, 21 and 22 of the Regulation.

NOTE 3 When a General Safety and Performance Requirement does not appear in Table ZA.1, it means that it is not addressed by this European Standard.

Table ZA.1— Correspondence between this European Standard and Annex I of Regulation (EU) 2017/745 [OJ L 117] and to system or process requirements including those relating to quality management systems, risk management, post-market surveillance systems, clinical investigations, clinical evaluation, or post-market clinical follow-up

General Safety and Performance Requirements of Regulation (EU) 2017/745	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
10.1 (a) and (b)	4, 5 and 6	This document covers the assessment of genotoxicity, carcinogenicity, endocrine disruptors, and reproductive toxicity and developmental toxicity only.
10.2	4, 5 and 6	This document covers the assessment of genotoxicity, carcinogenicity, endocrine disruptors, and reproductive toxicity and developmental toxicity only.
10.4.1 (first paragraph)	4, 5 and 6	GSPR 10.4.1 is only partly covered by this document, since this document does not provide requirements for design and manufacture, nor does it address risks associated with particles, except nanoparticles, from medical devices. This aspect is addressed concerning the assessment of genotoxicity, carcinogenicity, endocrine disruptors and reproductive toxicity and developmental toxicity only.
10.4.2 (a)	4, 5, 6 and 7	This aspect is addressed concerning the assessment of genotoxicity, carcinogenicity, endocrine disruptors and reproductive toxicity and developmental toxicity. This ensures that patients or users are safeguarded against exposure to residues, based on the extent and nature of their interaction with the medical device.

Table ZA.2— Normative references from clause 2 of this document and their corresponding European publications

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
ISO 10993-1:2025	ISO 10993-1:2025	*Biological evaluation of medical devices — Part 1: Evaluation and testing within a risk management process*	EN ISO 10993-1:2025
ISO 10993-2	ISO 10993-2:2022	*Biological evaluation of medical devices — Part 2: Animal welfare requirements*	EN ISO 10993-2:2022
ISO 10993-12:2021	ISO 10993-12:2021	*Biological evaluation of medical devices — Part 12: Sample preparation and reference materials*	EN ISO 10993-12:2021
ISO 10993-17	ISO 10993-17:2023	*Biological evaluation of medical devices — Part 17: Establishment of allowable limits for leachable substances*	EN ISO 10993-17:2023
ISO 14971:2019	ISO 14971:2019	*Medical devices - Application of risk management to medical devices*	EN ISO 14971:2019 EN ISO 14971:2019/A11:2021
OECD 471:2020	OECD 471:2020	*OECD Guideline for the Testing of Chemicals — Bacterial Reverse Mutation Test*	For applicable standard edition see Column 2
OECD 473:2016	OECD 473:2016	*OECD Guideline for the Testing of Chemicals — In Vitro Mammalian Chromosomal Aberration Test*	For applicable standard edition see Column 2
OECD 487:2016	OECD 487:2016	*OECD Guideline for the Testing of Chemicals — In Vitro Mammalian Cell Micronucleus Test*	For applicable standard edition see Column 2
OECD 490:2016	OECD 490:2016	*OECD Guideline for the Testing of Chemicals — In Vitro Mammalian Cell Gene Mutation Tests Using the Thymidine Kinase Gene*	For applicable standard edition see Column 2

The documents listed in the Column 1 of table ZA.2, in whole or in part, are normatively referenced in this document, i.e. are indispensable for its application. The achievement of the presumption of conformity is subject to the application of the edition of Standards as listed in Column 4 or, if no European Standard Edition exists, the International Standard Edition given in Column 2 of table ZA.2.

Table ZA.3— Correspondence between this European Standard and Annex II of Regulation (EU) 2017/745 [OJ L 117]

Requirements of Annex II of Regulation (EU) 2017/745	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
6.2 (c) fourth indent	4, 5 and 6	This document covers the assessment of genotoxicity, carcinogenicity, endocrine disruptors, and reproductive and developmental toxicity only

WARNING 1 Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

International Standard

ISO 10993-3

Biological evaluation of medical devices —

Part 3: Evaluation of genotoxicity, carcinogenicity, reproductive toxicity and developmental toxicity

Évaluation biologique des dispositifs médicaux —

Partie 3: Évaluation de la génotoxicité, de la cancérogénicité, de la toxicité sur la reproduction et de la toxicité sur le développement

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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.

This document was prepared by Technical Committee ISO/TC 194, *Biological and clinical evaluation of medical devices,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 206, *Biological and clinical evaluation of medical devices,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition of ISO 10993-3 cancels and replaces ISO 10993-3:2014 and ISO/TR 10993-33:2015.

The main changes are as follows:

— this document has been entirely revised to emphasize evaluation of genotoxicity, carcinogenicity, reproductive toxicity and developmental toxicity instead of testing;

— chemical characterization and toxicological risk assessment have been added as an approach to address genotoxicity, carcinogenicity, reproductive toxicity and developmental toxicity;

— the follow-up evaluation has been changed when an in vitro genotoxicity test is positive and the flowchart for follow-up evaluation has been removed;

— reproductive toxicity and developmental toxicity have been described separately;

— the annex on cellular transformation has been deleted;

— ISO/TR 10993-33 has been merged into this document as Annex B on genotoxicity test methods.

A list of all parts in the ISO 10993 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

The basis for biological evaluation of medical devices is often empirical and driven by relevant concerns for human safety. The risk of serious and irreversible effects, such as cancer or second-generation abnormalities, is of particular public concern. It is inherent in the provision of safe medical devices that such risks be minimized to the greatest extent feasible. The assessment of mutagenic, carcinogenic, reproductive toxicity and developmental toxicity hazards is an essential component of the control of these risks. Not all test methods for the assessment of genotoxicity, carcinogenicity, reproductive toxicity and developmental toxicity are equally well developed, nor is their validity well established for the testing of medical devices.

Significant issues with test sample size and preparation, scientific understanding of disease processes and test validation can be cited as limitations of available methods. Since the previous edition of this document, many genotoxicity test methods have been updated with revised OECD guidelines. However, these generally provide clearer recommendations but little alteration in test methods. Scientifically sound alternatives to the proposed testing can be acceptable insofar as they address relevant matters of safety assessment of the medical device.

In the selection of tests needed to evaluate a particular medical device, a careful assessment of expected human uses and potential interactions with biological systems is important, particularly in such areas as reproductive toxicity and developmental toxicity.

This document presents test methods and evaluation strategies for the identification of specific biological harms. Testing is not always necessary or appropriate in evaluating biological risks associated with exposure to medical device materials but, where it is appropriate, it is important that maximum test sensitivity is achieved.

In view of the multitude of possible outcomes and the importance of factors such as extent of exposure, species differences and mechanical or physical considerations, risk assessment is typically performed on a case-by-case basis. Suggestions for risk consideration and integration of ISO 10993-17 and ISO 10993-18[7] are provided.