

Biosafety Clearing-House (BCH)

BIOSAFETY VIRTUAL LIBRARY RESOURCES (VLR)

BCH-VLR-SCBD-116226-1 EN UK

LAST UPDATED: 22 JUL 2021

General Information

Title

Detection of genetically modified plants using LAMP (loop-mediated amplification) technologies

EN

Type of resource

General library resource

Article

Journal

Magazine

Newspaper

Author name(s)

Borys V. Sorochynskyi, Б. В. Сорочинський
Ukrainian Institute for Plant Variety Examination,
15 Henerala Rodymtseva St., Kyiv, 03041, Ukraine,
e-mail: see attached publication
<https://orcid.org/0000-0002-6167-4071>

EN

Publisher

Plant Varieties Studying and Protection

EN

Publication date

2021-04

EN

Source

Journal publication

EN

Access to the resource(s)

Link to the resource(s)

? [Detection of genetically modified plants using LAMP \(loop-mediated amplification\) technologies \(English \)](#)

? [Detection of genetically modified plants using LAMP \(loop-mediated amplification\) technologies \(Ukrainian \)](#)

- ? Детектування генетично модифікованих рослин з використанням технологій LAMP (реакція ампліфікації, що опосередкована через петлю) (*English*)
- ? Детектування генетично модифікованих рослин з використанням технологій LAMP (реакція ампліфікації, що опосередкована через петлю) (*Ukrainian*)
- ? Detection of genetically modified plants using LAMP (loop-mediated amplification) technologies (*English*)
- ? Детектування генетично модифікованих рослин з використанням технологій LAMP (реакція ампліфікації, що опосередкована через петлю) (*Ukrainian*)

Information on the content of the resource

Summary, abstract or table of contents

Purpose. Analysis of the current state and experience on the loop-mediated amplification (LAMP) use to detect genetically modified plants. **Methods.** Literature search and analysis. **Results.** General information on the current state and use of the genetically modified plants is provided. Despite the wide distribution of genetically modified plants, the attitude towards them in society continues to remain somewhat wary. About 50 countries have introduced mandatory labeling of GM feed and products, provided that their content exceeds a certain threshold. In order to meet labeling requirements, effective and sensitive methods for detecting known genetic modifications in a variety of plant materials, food products and animal feed must be developed and standardized. The most common approaches to the detection of genetically modified organisms (GMOs) are the determination of specific proteins synthesized in transgenic plants and the detection of new introduced genes. Methods for the determination of GMOs based on the analysis of nucleic acids are more common, since such methods have greater sensitivity and specificity than the analysis of protein composition. Polymerase chain reaction (PCR) method is the main method of nucleic acid analysis, which is now wide used for the detection of GMOs. Loop-mediated amplification (LAMP), which can occur at a constant temperature and therefore does not require the use of expensive equipment may be an alternative to the PCR. Scientific articles about the use of the loop-mediated amplification (LAMP) for the detection of genetically modified plants were analyzed. Advantages and disadvantages of the polymerase chain reaction and loop-mediated amplification are compared. **Conclusions.** The main criteria for applying a method of GMO detection analysis are as follow: its sensitivity, time of reaction, availability and ease to use, cost of reagents and equipment, and the possibility for simultaneous detection of many samples.

EN

Keywords for facilitating searching for information in the clearing-houses

Biosafety Thematic Areas

LMO use and transboundary movement
 Handling, transport, packaging and identification
 Unintentional transboundary movement
 Scientific and technical issues
 Food and feed safety
 Detection

Does this resource address one or more specific LMOs?

No

Does this resource address one or more specific organisms?

No

Does this resource address one or more specific genetic elements?

No

Additional Information

Identifier (ISBN, ISSN, etc.)	EN
https://doi.org/10.21498/2518-1017.17.1.2021.228209	
Format	
PDF and HTML	
Keywords and any other relevant information	
targets for detection; PCR; LAMP; detection limit	

[BCH-VLR-SCBD-116226-1](#)

Further Information

Questions about the Cartagena Protocol on Biosafety or the operation of the Biosafety Clearing-House may be directed to the Secretariat of the Convention on Biological Diversity.

**Secretariat of the Convention
on Biological Diversity**

413 rue Saint-Jacques, suite 800

Montreal, Québec, H2Y 1N9

Canada

Fax: +1 514 288-6588

Email: secretariat@cbd.int