



Technical
Specification

ISO/TS 21569-10

**Horizontal methods for molecular
biomarker analysis — Methods
of analysis for the detection of
genetically modified organisms and
derived products —**

Part 10:

**Construct- and event-specific
detection methods for genetically
modified salmon expressing CS-
GHc2 growth hormone**

*Méthodes horizontales pour l'analyse de biomarqueurs
moléculaires — Méthodes d'analyse pour la détection des
organismes génétiquement modifiés et des produits dérivés —*

*Partie 10: Méthodes de détection spécifiques à la construction et
à l'événement pour le saumon génétiquement modifié exprimant
l'hormone de croissance CS-GHc2*

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Foreword

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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).

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Horizontal methods for molecular biomarker analysis — Methods of analysis for the detection of genetically modified organisms and derived products —

Part 10:

Construct- and event-specific detection methods for genetically modified salmon expressing CS-GHc2 growth hormone

1 Scope

This document specifies procedures for the detection of a DNA sequence of a construct used to (genetically) enhance the growth of fish commonly found in aquaculture. The genetically modified AquAdvantage Atlantic salmon (*Salmo salar*) carries the construct expressing *CS-GHc2* growth hormone and can be detected based on a real-time polymerase chain reaction (PCR) targeting either the border between the growth hormone coding sequence (*CS-GHc2*) of *Oncorhynchus tshawytscha* (Chinook salmon) and the antifreeze terminator (*T-AFP*) of (*Macro-*) *Zoarces americanus* (ocean pout), i.e. with the construct-specific method, or the border between the Atlantic salmon genomic DNA and the antifreeze promoter (*P-AFP*) of ocean pout, i.e. with the event-specific method. These methods can be applied to identify the genetically modified (GM) fish or for screening purposes.

This document is applicable for the analysis of DNA extracted from foodstuffs. It can also be suitable for the analysis of DNA extracted from other products such as feedstuffs. The application of these methods requires the extraction of an adequate amount of amplifiable DNA from the relevant matrix.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 16577, *Molecular biomarker analysis — Vocabulary for molecular biomarker analytical methods in agriculture and food production*

ISO 21569, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — Qualitative nucleic acid based methods*

ISO 21571:2005, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — Nucleic acid extraction*

ISO 24276, *Foodstuffs — Methods of analysis for the detection of genetically modified organisms and derived products — General requirements and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16577 apply.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>