

プラスミド DNA を用いた中国産安全性未承認遺伝子組換えコメ 検査に関する外部精度管理調査

(2012年5月22日受付)

(2012年11月1日受理)

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Proficiency testing of unauthorized genetically modified rice using plasmid DNA test samples

(Received May 22, 2012)

(Accepted November 1, 2012)

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Abstract

Proficiency testing of the assay for detecting unauthorized genetically modified (GM) rice was conducted. Test samples prepared from genomic DNA extracted from non-GM rice and two types of positive control plasmid DNA for qualitative PCR test and for real-time PCR test were sent to 33 laboratories for the purpose of detection using the Japanese official method. The test samples for qualitative PCR testing were prepared to be 1 v/v % and 0.05 v/v % in the ratio of the plasmid DNA for qualitative PCR to genomic DNA, and the test samples for real-time PCR testing were prepared to be 0.6 v/v % and 0.12 v/v % in the ratio of the plasmid DNA for real-time PCR to genomic DNA. For the proficiency testing, 31 of 33 laboratories correctly identified all samples. However, two laboratories reported incorrect identification of the non-GM samples. We considered that the incorrect results were due to contaminations of the reaction mixture with plasmid DNA or other interfering DNA. For the real-time PCR analysis, some laboratories using the specific real-time PCR device reported elevated baseline in the multicomponent analysis. The results of this proficiency testing study suggest that the proficiency testing using plasmid DNA samples was useful tool to investigate important factors affecting the reliability of detection results of unauthorized genetically modified rice.

Keywords : 遺伝子組換えコメ、プラスミド DNA、外部精度管理調査
genetically modified rice, plasmid DNA, proficiency testing

I 緒言

安全性審査を受けていない遺伝子組換え (GM) 食品は、食品衛生法に基づいて厚生労働大臣が定めた「食品、添加物等の規格基準」により製造、輸入、販売等が禁止されている。

2006年9月、環境保護団体グリーンピースがフランスとドイツで、また同じく Friends of the earth がイギリスで、中国産のコメ加工品から、GM コメを検出したと発表した^{*1, *2}。日本では今のところ安全性審査を完了した GM コメは存在しないため、GM コメを含む食品は直ちに流通禁止となる。このため2006年9月26日、厚生労働省医薬食品安全部監視安

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*1 Illegal genetically engineered rice from China in European rice products
<http://www.greenpeace.org/international/press/reports/IllegalChinaGERice>

*2 Illegal GM rice found in UK http://www.foe.co.uk/resource/press_releases/illegal_gm_rice_fonud_in_u_05092006.html