EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Institute for Health and Consumer Protection
Molecular Biology and Genomics Unit

Mandate for an ENGL Working Group on use of digital PCR for GMO and other DNA analysis (WG-dPCR)

Approved by the ENGL Steering Committee on 11th February 2015

Background

Digital PCR (dPCR), in its different formats (chamber dPCR, droplet dPCR) is rapidly evolving in the area of DNA analysis. Digital PCR brings various advantages over the traditional real-time PCR, among which the large number of parallel repetitions (from few hundreds to thousands per sample), the possibility to conduct an absolute quantification without standard curves, and the reduced sensitivity to PCR inhibitors affecting DNA analysis.

During 2014 the ENGL has discussed the current application of dPCR to GMO analysis and identified that the technology has the potential to advance regulatory DNA analysis. Pros and cons were identified during an ENGL discussion day where experts also identified some issues to be solved to facilitate routine application of dPCR for DNA analysis.

Tasks

The WG should review the following issues, identify future needs and propose approaches to address them:

- Transferability of existing qPCR methods into a digital PCR format
- Accreditation (including in-house validation)
- Applicability to difficult matrices
- Applicability to analytical areas other than GM food/feed
- Definition and assessment of relevant method performance criteria
- Multiplexing

Other issues may be added to this initial list.

As a result, a document should be produced, addressing the various issues discussed and summarising relevant existing experience with dPCR, thus helping laboratories to decide if dPCR would meet their specific needs.

Timeline

The working group is expected to meet before the next ENGL plenary (15/16 April 2015) and to produce an initial draft for discussion by the ENGL Steering Committee of 17/18 June 2015.

A consolidated version should be presented in autumn 2015 at the ENGL plenary meeting.