

Oligonucleotide mixture for detection of human papillomavirus genotypes (P-760)

Key Facts

The “ready to use kit” offers the possibility of

- simultaneous detection of up to 51 HPV genotypes in a single reaction
- homogeneous detection limits with no underestimation of individual genotypes
- reliable quantification of the different genotypes
- predefined high viral load cutoffs to identify cervical abnormalities
- with internal DNA quality and PCR performance control

Background

Cervical cancer (cancer of the uterine cervix) is the second most common cancer among women worldwide with about 470,000 newly diagnosed cases and almost 250,000 deaths every year. The predominant cause for cervical cancer is infection of the cervix with human papillomavirus (HPV), particularly with high-risk HPV genotypes.

The identification of specific HPV genotypes is important, as various HPV genotypes and multiple infections pose different risks to the affected patients. HPV DNA tests are detecting ongoing infections and cervical lesions but their specificity for absence disease is low. In contrast, high viral load was shown to improve the specificity significantly.

There is a need for more reliable tests detecting and quantifying different human papillomavirus (HPV) genotypes and, in particular, the high-risk and putative high-risk genotypes.

The Technology

The oligonucleotide mixture is used for diagnosing and quantifying different HPV genotypes and assessing the severity of a HPV infection in a sample. This new oligonucleotide mixture allows the detection of various mucosal HPV genotypes, particularly of the high-risk HPV genotypes 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 73 and 82, putative high-risk HPV

types 26, 53 and 66 and all known low-risk HPV types.

The inventors used Multiplex HPV Genotyping (MPG), a simple bead-based high-throughput hybridization method that allows the simultaneous detection and genotyping of up to 100 HPV types. This method is very cost effective, sensitive and suitable for large scale studies.

Applications and Commercial Opportunity

DKFZ is seeking for a licensing partner interested in this promising new technique.

Inventors

The DKFZ investigators are: Tim Waterboer, Michael Pawlita and Markus Schmitt.

Intellectual Property

The “ready to use kit” is mainly based on the patent family [WO2009027403](#), which was nationalized and granted as [EP2195468](#) (DE, CH, FR, GB, IT, NL) and [US8202694](#).

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