

Quantitative detection of cell free HPV DNA in plasma samples using Nanopore Sequencing

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Background & objectives

Around 690.000 cancer cases are attributable to human papillomavirus (HPV) infection globally every year, most of them cervical (570.000) and oropharyngeal (42.000) cancers. Based on our current lab developed test (HPV-SEQ), that can quantitatively detect cell free HPV16/18 DNA in plasma samples, we strive to develop an assay in a distributed Kit format with matched performance.

Methods

We use PCR for targeting endogenous cell free HPV 16/18 DNA isolated from plasma. In conjunction with an internal quantification method, this library is sequenced on a Nanopore Sequencing device to identify HPV16/18 DNA in a range of 5-50,000 copies.

Results

Utilizing the Nanopore Sequencing technology, a low investment sequencing platform with real time analysis capability, the customer can batch up to 32 samples or run individual samples at almost equal cost.

Conclusion

Among other applications this method can be used to monitor tumor burden of HPV associated cancers. This kit is designed for quick turn-around time, ease of use and low sequencing cost.