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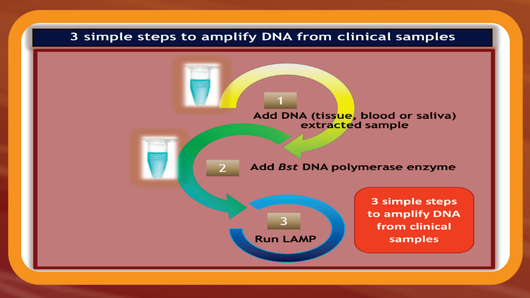
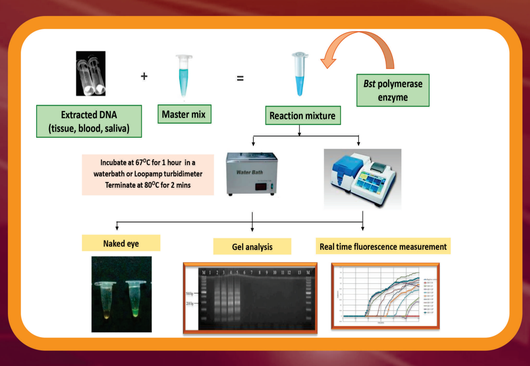
INTELLECTUAL PROPERTY:
- PATENT FILED (PI 2018704309)

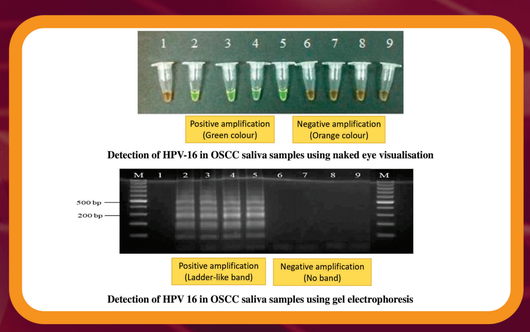
Oral HPV-16 LAMP Kit

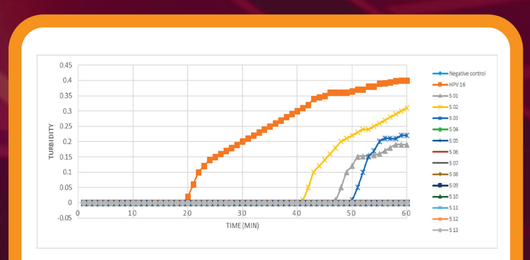
Rapid detection of Human Papillomavirus 16 DNA in tissue, blood and saliva specimens of oral cancer

A 66-year-old Malay woman presented with oral squamous cell carcinoma at the left maxillary edentulous ridge with palatal extension (mirror image). *Courtesy of Prof. Shaifulizan Abdul Rahman*









Real-time detection of HPV 16 in OSCC saliva samples using Oral HPV-16 LAMP

Introduction
- Human papillomavirus (HPV) 16 is a major oncogenic factor in oral cancer and high prevalence in Malaysia (51.4%) (Saini et al., 2011).
- HPV+ oral cancer has better response to chemo-radiation therapy and 74% reduction of death risk (Taberna et al., 2017).

Problem Statement
- p16 IHC - expensive, requires a skillful technician, time-consuming, difficulty to interpret by pathologist due to subjectivity of assessment and low specificity (46-78%)

Inventiveness and Novelty
- To the best of our knowledge, no commercial loop-mediated isothermal amplification (LAMP) kit for detection and quantification of HPV 16 in tissue, blood and saliva of oral cancer is available in the market.
- Oral HPV-16 LAMP offers a rapid, cheap, highly sensitive, specific, and simplified quantitative method for HPV16 detection.

Intellectual Property Status
- Patent filed (PI 2018704309)

Usefulness and Application
- Oral HPV-16 LAMP kit is useful in
  - classification of HPV (+) and HPV(-) oral cancer,
  - SCC of unknown primary with neck nodes,
  - saliva screening for early detection and preventive strategies.

Status of Invention
- Final lab-scale

Commercial Potential
- High incidence of HPV+ oral cancer in developed countries.
- Malaysia & International market.

Potential Partners
- Healthcare companies and private laboratories.

Knowledge Management (Grant/Publication/etc)
- eScienceFund Grant (02-01-05-SF0710)
- Publications: 1 published, 2 submitted (ISI and Scopus).
- Presentations: Scientific conferences, Travel Awards (Korea and Thailand)
- Students – 1 PhD, 1 Msc

Impact of the Product
- Rapid (1 hour)
- Cost-effective
- Sensitive and specific (100%)
- Pre-optimized master mix in a single-tube assay minimize pipetting steps and reduce contamination.
- Ready to use, easy to perform (addition of sample and enzyme polymerase only)
- Quantitative (Viral Load)

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