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Agilent, Queensland univ join hands for cancer research

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Singapore: Agilent Technologies plans to collaborate with the University of Queensland Center for Clinical Research in Brisbane, Australia, to increase understanding of the genomic differences between young and older patients with oral cancer and between progressive and non-progressive oral potentially malignant lesions.

Oral cancer is part of a group of cancers commonly referred to as head and neck cancers. According to the National Center for Biotechnology Information, under the U.S. National Institutes of Health, oral cancer is the sixth most common cancer worldwide. Over 275,000 new cases are diagnosed per year, resulting in nearly 125,000 deaths annually1. Oral squamous cell carcinoma (OSCC) was once considered a disease affecting older, high-risk men, but the past decade has shown an increase in the number of cases in younger, low-risk patients.

Oral potentially malignant lesions (OPMLs), which are visible, morphologically altered precursors of many OSCCs, are important cancer prevention targets. The underlying reason for progression of OPML to OSCC is not fully understood. By implementing next-generation sequencing and data analysis, scientists can unravel the molecular genetic basis of these diseases, potentially leading to the development of targeted preventive therapies.

"Our collaboration and support from Agilent will accelerate our work in this important area of clinical research," said associate professor Camile Farah, head of the Oral Oncology Research Program at UQCCR.

DNA obtained from OPML and OSCC from both young and older patients and sequential biopsies from patients with OPML will be followed for at least seven years from initial clinical diagnosis. Protein-coding regions for the DNA will be selectively enriched using Agilent's SureSelect target enrichment system (SureSelect Human All Exon V5) followed by DNA sequencing on the SOLiD5500 (Life Technologies). The data will be analyzed at the Queensland Facility for Advanced Bioinformatics, which will compare3 DNA alterations at different stages of carcinogenesis.

"SureSelect has been successfully used by researchers to discover the genetic basis of a wide range of diseases," said Agilent's Dr. Russell McInnes, general manager for Genomics Solutions, South Asia Pacific and Korea. "Now, working with Professor Farah, we will enable greater understanding of the genetic changes that characterize oral cancers. Agilent is delighted to be a partner in this clinical research project.