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Author(s)	Tang, G; Yip, HK; Samaranayake, LP; Luo, G
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0860 Prevalence Analysis of Actinomyces in Supragingival Plaque of Ethnic Chinese Children with/without Early Childhood Caries

G. TANG, [H.-K. YIP](#), L. SAMARANAYAKE, and K. LUO, The Prince Philip Dental Hospital (The University of Hong Kong), Hong Kong

Actinomyces spp. are suspicious pathogens of permanent tooth decay, which also cause other oral and systematic infection. Very limited epidemiological and microbiological studies investigated the role of Actinomyces in the pathogenesis of early childhood caries in ethnic Chinese children. Objectives: This study investigated the prevalence of seven common Actinomyces spp in supragingival plaque of ethnic Chinese preschool children with/without caries. Methods: A total of 53 preschool children, comprising 35 with active caries (15 from Singapore and 20 from Hong Kong) and 18 without caries (8 from Singapore and 10 from Hong Kong), were each sampled from the intact interproximal enamel areas. The bacterial genomic DNA of each sample was extracted and, variable regions of 16S ribosomal DNA were amplified and labeled with digoxigenin. The oligonucleotide probes specific for *A. bovis*, *A. gerencseriae*, *A. israelii*, *A. meyeri*, *A. naeslundii*, *A. odontolyticus* and *A. viscosus* were used to detect these species. Results: Among the seven species, *A. odontolyticus*, *A. gerencseriae*, *A. naeslundii*, *A. meyeri*, and *A. viscosus* were detected from supragingival plaque, but their prevalence rates in the groups of Singapore/Hong Kong, or with/without caries didn't show any significant difference. *A. odontolyticus* (90.6%) and *A. gerencseriae* (56.6%) were detected in more than 50% samples, and the positive hybridization signals of the latter in the caries groups indicated stronger than those in the caries-free group. *A. bovis* and *A. israelii* was not detected in all these samples. Conclusions: This study demonstrated *A. odontolyticus* and *A. gerencseriae* play an important role in the supragingival plaque formation of primary teeth in ethnic Chinese children, and *A. naeslundii*, *A. viscosus* and *A. meyeri* participate in the plaque formation. The data also indicated *A. gerencseriae* might play a role in the initial stage of early childhood caries in ethnic Chinese cohort.

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