

4037503 DTPD/M: MAJOR : PEDIATRIC DENTISTRY ; M.Sc.(PEDIATRIC DENTISTRY)
KEY WORDS : FOLLOW-ON FORMULA/ HUMAN MILK/ EARLY CHILDHOOD CARIES/ IN VITRO STUDY
WALLOP JANSAWANG : EFFECT OF DIFFERENT FOLLOW-ON FORMULAS AND HUMAN MILK ON CARIES DEVELOPMENT IN PRIMARY INCISORS : AN *IN VITRO* STUDY. THESIS ADVISORS : CHIARUPIM KIATPRAJAK, M.P.H.M., SIRIRUK NAKORNCIAI, DIPLOMATE AMERICAN BOARD OF PEDIATRIC DENTISTRY, BOONYANIT THAWEBON, M.Sc., YUWADEF ASVANUND, CERT. IN PEDIATRIC DENTISTRY, 76 P. ISBN 974-662-777-5

The objectives of this study were to determine the cariogenic potential of four follow-on formulas commercially available in Thailand, human milk and 10 % sucrose solution *in vitro* model and to compare carious lesion depth. Ninety caries-free, restoration-free primary incisors were stored in 0.9 % normal saline solution at 4 °C and prepared by embedding in acrylic resin blocks. Crowns were coated with acid-resistant varnish leaving a 3.14 mm² window on the labial surfaces. Samples were divided into 6 groups with 15 teeth each. Each group was tested with a different solution. Each sample was incubated separately with 5 ml of test solution and 1 ml of *S. mutans* suspension at 37°C in 5 % CO₂. Test solutions were replaced daily. Five teeth per group were randomly chosen at 3, 6 and 9 weeks for visual examination of the enamel. Samples, at 6 weeks, were sectioned. Polarized light photomicrographs were taken for each section at magnification of × 50 and carious lesion depths were measured. The results indicated that all test solutions were cariogenic in an *in vitro* model. ANOVA and LSD test showed that all follow-on formulas and human milk differed significantly in their abilities to develop caries progression (P < 0.05). Furthermore, Isomil produced the highest carious lesion depth (300.34±20.50 μm) and human milk produced the lowest carious lesion depth (93.66±11.62 μm) at significance level less than 0.05 (P < 0.05).