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**URINARY COTININE AND 1-HYDROXYPYRENE-
GLUCURONIDE AS BIOMARKERS OF ENVIRONMENTAL
TOBACCO SMOKE**

Kyoung Ho Lee¹, Soo-Hun Cho¹, Ho-Jang Kwon², Seung Sik Hwang¹ and
Deahee Kang¹

¹Department of Preventive Medicine, Seoul National University College of
Medicine

²Department of Preventive Medicine, Dankook University College of
Medicine

This study was conducted to compare two biomarkers of environmental tobacco
smoke (ETS); urinary cotinine and 1-hydroxypyrene-glucuronide (1-OHPG).

Urine samples were collected from 102 junior high school students. Urinary cotinine
was determined by GC and urinary 1-OHPG was assayed by synchronous fluorescence
spectroscopy (SFS) after immuno-affinity purification using monoclonal antibody 8E11.
Information on ETS was collected by self-administered questionnaire. Pearson's
correlation coefficient was used to evaluate the association between urinary cotinine
and 1-OHPG levels.

Log transformed urinary cotinine levels were significantly correlated with the amo-
unts of ETS assessed by the questionnaire. (Pearson's correlation coefficient, $r=0.36$,
 $p<0.01$). Urinary 1-OHPG levels were also significantly correlated with amounts of
ETS (Pearson's correlation coefficient, $r=0.25$, $p=0.01$). Moreover, a significant
positive correlation was observed between urinary 1-OHPG and urinary cotinine levels
in children with ETS exposure (Pearson's correlation coefficient, $r=0.19$, $p=0.05$).

This study suggested that urinary 1-OHPG can be potentially useful biomarkers of
environmental tobacco smoke.

Keyword : Cotinine, 1-hydroxypyrene glucuronide, Environmental tobacco smoke