BIOMONITORING OF ACRYLAMIDE, GLYCIDAMIDE AND N-ACETHYL-S-(2-CARBAMOYLETHYL)CYSTEIN IN HUMAN URINE

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The objective of this study was to evaluate the internal exposure of acrylamide (AA) in Korean. We collected urine samples in the general population aged from 18 to 69 years (n=1,866) and measured concentration of AA, glycidamide (GA) and N-acetyl-S-(2-carbamoylethyl)cystein (AAMA) in urine samples. Determination was developed by ESI-tandem mass spectrometry (ESI-MS/MS) in positive ionization mode. The total geometric mean (GM) level was 5.39±0.35 ng/g creatinine for AA, 7.17±0.14 ng/g creatinine for GA and 20.13±1.03 ng/g for AAMA in sample. No significant difference was observed between male (n=803, 5.45±0.50 ng/g creatinine, 7.00±0.13 ng/g creatinine) and female (n=1,063, 5.33±0.36 ng/g creatinine, 7.34±0.22ng/g creatinine) both in AA and GA. But significant difference (p<0.001) was observed between male group (23.06±1.79 ng/g creatinine) and female group (17.56±0.91 ng/g creatinine) in AAMA level.