

原著

# スポット尿を用いた生物学的モニタリングのための尿中代謝物濃度の補正 -クレアチニン補正と比重補正-

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## Adjustment for Urinary Metabolite Concentration on Biological Monitoring with Sport Urine : Adjustment to Creatinine and Specific Gravity,.

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### Abstract

Individual spot samples of urine of subjects exposed and unexposed to organic solvent were measured for specific gravity and creatinine. The relationship between the specific gravity and the logarithms of the creatinine concentration was found to be linear, though that between the specific gravity and the creatinine concentration was not linear. The correlation coefficient between the solvent concentrations of toluene or xylene in the air and the metabolite concentrations of hippuric or methylhippuric acid corrected by the specific gravity and the creatinine concentration in the urine was higher than that between the solvent concentrations and the uncorrected metabolite concentrations (observed value). Moreover, the correlation coefficient between toluene or xylene concentrations and hippuric or methylhippuric acid concentrations corrected by creatinine concentrations was higher than that between toluene or xylene concentrations and hippuric or methylhippuric acid concentrations corrected by specific gravity in the urine containing over-concentrated or over-diluted urine.

要約

有機溶剤の暴露者および非暴露者のスポット尿試料の比重とクレアチニンを測定した。尿比重とクレアチニン濃度の関係は直線的ではなく、[尿比重]と[クレアチニン濃度の対数値]の関係が直線的であった。気中有機溶剤(トルエンおよびキシレン)暴露濃度と、尿中代謝物(馬尿酸およびメチル馬尿酸)濃度との相関係数は、尿中代謝物濃度をクレアチニンあるいは比重で補正した方が、尿中代謝物濃度の未補正濃度(実測値)の場合より高かった。さらに、過度に濃縮または希釈された尿試料を含む場合は、尿中代謝物濃度をクレアチニン濃度で補正した方が比重で補正した場合より、気中濃度との相関係数は高かった。

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