〔Bunseki Kagaku, **40**, 199-202 (1991)〕 [Lab. of Pharm. Analytical Chemistry]

Color Reactions of Homovanillic Acid Related Compounds with Nitrosonaphthols.

SATOSHI KAWAI*, MIKA NOGUCHI, CHIEKO ISHIGURE, KYOKO KODAMA

Color reactions of 36 homovanillic acid related compounds were examined using three kinds of nitrosonaphthols, 1-nitroso-2-naphthol, 2-nitroso-1-naphthol and 2-nitroso-1-naphthol-4-sulfonic acid. Reaction specificity is discussed. Guaiacols, phenols with an electron donating group para to the hydroxyl and 5-hydroxyindoles gave generally positive reaction, while compounds having strongly electron-withdrawing groups resulted in no coloration. Catechol derivatives also gave no coloration. Differences were observed in color intensity of some compounds when acetic acid and ethanol were used as the solvent. However, the three reagents resulted in slight variations.

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Application of a Metal Capillary Column in Gas Chromatographic Determination of Catechol-O-methyltransferase Activity.

SEISYU KOH, KOJI URAYAMA, SATOSHI KAWAI*, YUZI TAKAYAMA

The utility of a deactivated metal capillary column, Rascot, in the measurement of an enzymatic reaction, in this case measurement of rat catecol-O-methyltransferase activity, was examined. 3,4-Dihydroxybenzaldehyde, 3,4-dihydroxybenzylalcohol and 3,4-dihydroxybenzoic acid were used as substrates and the *m*- and *p*-O-methylated products were separated by using Rascot after derivatization. The peaks on the chromatograms were symmetrical. The data obtained were compared with those reported in previously published papers. Good agreement with previous results proved that Rascot is able to withstand practical use in biological materials.

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High-Performance Liquid Chromatographic Determination of Pyrroloquinoline Quinone as Acetone Adduct.

KENJI KANO*, BUNJI UNO, CHIE KAWASAKI,
KIYOMI HORIKI, SATOSHI KAWAI

A High-performance liquid chromatographic method for the determination of pyrroloquinoline quinone (PQQ) is described. PQQ reacts readily with acetone in a weakly alkaline medium, giving a stable adduct, 5-acetonyl PQQ. The adduct was separated on a Develosil C_{18}-5 column using a mixture of methanol and 0.06 M phosphoric acid, and was detected at 254 nm. The response was linear over the range $(1\text{-}20)\times10^{-6}$ M of PQQ and the detection limit was 2 pmol for a 20-μl injection volume. The present procedure is much simpler and more convenient compared with those presented in previous papers, and may be useful for enzymatic studies of PQQ.