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Drogenscreening mit Mahsan



Den Drogen auf der Spur

Measuring ethanol in urine with QED[®] Saliva Enzymatic Test device: Comparison of Results with gas chromatography.

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We evaluated the QED[®] A-150 Saliva Alcohol Test for the determination of alcohol in urine. The QED[®] Saliva Alcohol Test is a rapid enzymatic alcohol dehydrogenase assay which quantitatively measures alcohol concentrations from 0 to 150 mg/dL. We followed the manufacturer's procedure, except that the cotton tip of the swab was dipped into urine so that Gas Chromatography (GC) with flame ionization detector (FID) on a glass column, 1.82 m x 2 mm ID glass column, 60/80 Carbowax B/ 5% Carbowax 20M (Supelco, Bellefonte, PA, 16823). N-propanol (NP) is used as international standard (IS). Spiked urine ethanol at 20, 40 and 80 mg/dl gave the following average results. Within-run precision by QED[®] at the 3 concentrations (n=12) was 7.3% with a 128 +/- 31% recovery; between-run precision averaged 11% with 131 +/- 29% recovery. For comparison the average within-run precision by GC at the 3 concentrations (n=12) was 2.9% with a 104 +/- 5% recovery; between-run precision averaged 4% with 103 +/- 3% recovery. Urine samples (n=14) that were analyzed on the same day by QED[®] and GC gave the following results: samples ranged from 0 to 243 mg/dL of ethanol with a mean of 79.29 +/- 62.98 by GC and a mean of 75.35 +/- 61.84 by QED[®]. Last squares analysis, GC (x) and QED[®] (y) gave a slope (m) of 0.977, y-intercept (b) of -2.11 and correlation coefficient (r) of 0.99 ($y = 0.977x - 2.11$, $r = 0.99$) with a standard error of estimate, S_{yx} , of 6.4. Recovery studies indicate that QED[®] overestimates urine alcohols at low concentrations. No false positives were reported by QED[®]. Interference studies indicate that n-propanol cross reacts approximately 70% with the QED[®] alcohol method. We conclude that the QED[®] saliva method can be used for the determination (identification and quantization) of alcohol in urine. Although QED does not have the sensitivity, selectivity and precision or accuracy of GC, it will provide results more rapidly than GC, less than 3 minutes.