## PLASMA DRUG TESTING FOR D AND L ISOMERS OF AMPHETAMINE AND METHAMPHETAMINE BY LIQUID CHROMATOGRAPHY MASS SPECTROMETRY WITH A RANGE OF 2.5 TO 1000 NG/ML

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**Introduction:** Development and validation of a quantitative plasma assay for measuring D and L amphetamine and methamphetamine in human K2 EDTA samples to determine prescription versus illicit sources of the analytes. The assay was developed using liquid-liquid extraction followed by a dry down step and reconstitution with D and L mobile phase. The samples were separated on a chiral column and measured using an API 4000™ LC/MS/MS system. **Methods:** The assay was validated according to US FDA, CLIA and CAP guidelines including assessment of the following parameters in plasma validation samples: linear range, limit of detection, lower limit of quantitation, matrix effects, inter- and intra-day assay precision and accuracy, carry over, linearity of dilution, matrix effects and stability. Detection was done by using an The assay was validated according to US FDA, CLIA and CAP guidelines including assessment of the following parameters in plasma validation samples: linear range, limit of detection, lower limit of quantitation, matrix effects, inter- and intra-day assay precision and accuracy, carry over, linearity of dilution, matrix effects and stability. Detection was done by using an API 4000™ LC/MS/MS system. The chiral separation was performed using isocratic separation with a Supelco Astec CHIROBIOTIC ® V2 (25 cm x 2.1 mm, 5µm) column. **Results:** The assay had a dynamic range of detection from 2.5 to 1000 ng/ml for all 4 analytes. It had %error (%E) and % coefficient of variability (%CV) < 20 at the lower limit of quantitation (LLOQ) (2.5 ng/ml) and < 15 over the range of the assay for the standard curve. Validation samples at 7.5 300 and 900 ng/ml exhibited inter and intra-assay %CV and %E of < 15. The analytes exhibit excellent room temperature, refrigerated, and frozen stability characteristics with less than 15% from expected. The assay showed good post extraction stability with less than 15% degradation over 7 days. There were negligible effects of matrix, carry over, freeze thaw, concomitant medications, and dilution. **Conclusions:** A quantitative method was developed and validated as reliable technique for determination of D and L isomers of amphetamine and methamphetamine in human plasma samples on an older API 4000™ LC/MS/MS system using liquid-liquid extraction.

## COMPARISON BETWEEN MINDRAY 6800-PLUS AND SYSMEX X-20 INSTRUMENTS FOR THE ANALYSIS OF BODY FLUIDS

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**Introduction:** The analysis of body fluids (BF) is a commonly practiced test to check the cause of an effusion or to investigate the cause of meningitis, hemorrhage or tumors. Nowadays, the automated hematology instruments includes also the automated analysis of BF. Our objetive is to compare the BF analysis performance of the instrument Mindray6800Plus with the Instrument SysmexXN20. **Methods:** We analyzed 153 BF selected from among all those that we received in the laboratory. The only requirement was that there was the necessary volume to analyze the samples with both instruments. All BF were analyzed in a Mindray6800 and in a SysmexXN20. We used the statistical package Medcalc: summary statistics tables, D´Agostino-Pearson and Passing-Bablok regression method. **Results:**

**CSF (n=60)**

| | Mean Min-dray6800 | Sysmex XN20 | Slope [95%CI]; Intercept * | Pear-son CC | *p* |
|---|---|---|---|---|---|
| **WBC** | 1741.42 | 1541,07 | 0.989 [0,96-1]; 0.1709 | 0,998 | < 0,0001 |
| **RBC** | 13190,5 | 14421,3 | 0.9923 [0,94-1]; 201,15 | 0,982 | < 0,0001 |
| **PMN%** | 43,85 | 41,19 | 0.9701 [0,92-0,998]; -0,035 | 0,991 | 0,0075 |
| **MN%** | 53,11 | 55,78 | 0.9777 [0,93-1,006]; 2,694 | 0,991 | 0,0017 |

**PLEURAL FLUID (n=53)**

| | Mean Min-dray6800 | Sysmex XN20 | Slope[95%-CI]; Intercept * | Pear-son CC | *p* |
|---|---|---|---|---|---|
| **WBC** | 7955,02 | 7864,5 | 1,06[1,3-1,097]; -6,62 | 0,979 | < 0,0001 |
| **RBC** | 146773,6 | 137849,1 | 1[1-1,032]; 0 | 0,962 | < 0,0001 |
| **PMN%** | 26,63 | 25,94 | 1[0,974-1,04]; 0,3 | 0,955 | 0,0106 |
| **MN%** | 73,32 | 74,06 | 1[0,971-1,04]; -0,5 | 0,954 | 0,0106 |

**ASCITIC FLUID (n=40)**