

## Determination of nicotine and cotinine in meconium using new technique with solid phase modified extraction (DPX) and GC-MS.

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**Introduction:** Drug use by women of reproductive age has been considered an important public health problem worldwide. Complications induced by substance use during pregnancy are multiple and multifactorial, and may have undesirable effects such as harmful effects on children. Meconium has been appointed as the matrix of choice for toxicological analysis and indicator of exposure to drugs during pregnancy. The device DPX is a new method of solid phase extraction speed and combining the sample and minimal use of solvents.

**Objective:** To develop a simple and rapid method for the identification of nicotine and cotinine in meconium with DPX extraction and gas chromatography coupled with mass spectrometry (GC-MS). **Methods:** Meconium weighed 0.3 g in a conical tube and fortified with 150ng of standards. Then added 3 ml of methanol and the sample was subjected to intense agitation. Subsequently, the sample was centrifuged and the supernatant was transferred to a new tube for the extraction procedure. The DPX tips were conditioned with 30% acetonitrile, and then the sample was aspirated and kept in contact with the solid phase for approximately 1 minute, allowing a constant air input. After this period, the sample was discarded, continuing the washing nozzle, carried out with 1 ml of deionized water. For elution of the analytes was used a solution of dichloromethane: isopropanol: ammonium hydroxide (78:20:2). The eluate was evaporated at 45 ° C, was reconstituted in 40 µL of acetonitrile and derivatized with MSTFA (N-methyl-N-(trimethylsilyl) trifluoroacetamide). 1 µL of the resulting solution was subjected to analysis by GC-MS. **Results:** The analytes (nicotine and cotinine) were extracted from meconium samples successfully using the tips of solid phase extraction, DPX. Standard curves for all analytes studied were linear over the concentration range of 20-900 ng / ml. At the time when the method was effective to detect concentrations up to 10 ng / ml. **Conclusion:** These results demonstrate that the proposed method was efficient in the identification of nicotine and cotinine in meconium samples, besides presenting the following advantages: speed, use low volumes of solvent and easy.

**Keywords:** nicotine, cotinine, meconium, DPX, GC-MS.

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