VORTEX-ASSISTED LIQUID-LIQUID MICRO-EXTRACTION COUPLED TO SPECTROPHOTOMETRIC PROPOFOL DETERMINATION IN BIOLOGICAL MATRICES

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Propofol is a phenolic compound used in medicine as an intravenous anesthetic with fast onset and offset of action. A major problem related with propofol use is the absence of an adequate analytical method to monitor circulating levels during surgery. This difficulty arises from the low levels at which propofol exerts its physiological effects which imposes the use of large bench top chromatographic systems. In this work, a vortex assisted liquid-liquid micro-extraction by using ionic liquids was developed to pre-concentrate propofol and to improve separation in biological matrices. Ionic liquids are ionic medium resulting from combinations of organic cations and various anions and may be liquid at room temperature. They have been considered as green solvent and have been applied in organic synthesis and catalysis, etc. Its low vapor pressure, viscosity and miscibility with water and other organic solvents made it have great applications in many fields. In this context it is exploited the use 1-butyl-3-methylimidazolium hexafluorophosphate as extracting phase for liquid-liquid micro-extraction of propofol and its application in serum analysis. The high enrichment factors enabled by the procedure provides simple spectrophotometric determination of the propofol at the wavelength of 260 nm. With the proposed procedure it was obtained a linear range between 0.10 and 1.00 mg/L, a detection and a quantification limit of about 0.07 mg/L and 0.23 mg/L, respectively. These values were achieved when 400 µL of biological sample is analyzed.

KEYWORDS: propofol, ionic liquids; spectrophotometry, serum