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Anodic stripping voltammetry to determine sub-fg/L of nickel

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In our study, atomic layers of nickel were electrodeposited onto gold electrode within a few seconds. The nickel deposition was characterized by chronocoulometry and scanning electron microscopy. A simple method was developed for rapid and reliable determination of ultra-trace Ni by square-wave anodic stripping voltammetry. The key operational parameters of influencing the electroanalytical response of Ni, such as deposition potential, deposition time, and composition of the measurement solution, were investigated. Under the optimized condition, the detection limit was below 1 fg L−1, which is the lowest ever reported for an electroanalytical technique and one of the lowest analytical methods for nickel determination.

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Formulation and evaluation of glyburide liquisolid compacts

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The intention of present investigation is to develop the glyburide liquisolid compacts containing varying amounts of carrier and coating materials to enhance the bioavailability of glyburide when compared to conventional tablets. MCC or Avicel pH 101/102 as carrier and Aerosil as the coating material are selected for the preparation of liquisolid compacts. Liquisolid technique is a new and promising method that can change the dissolution rate of drugs. This technique of liquisolid preparation is used to formulate drug solution in solid dosage form. From the *in vitro* drug release studies the optimized formulation F6 showed 92.57±0.54% drug release in 10 min where as the conventional tablets showed 23.87±1.13% in 10 min. The F6 formulation showed 9.25% /min initial dissolution rate, 2.14 relative dissolution rate and 67.52 dissolution efficiency. When compared to conventional tablets, dissolution efficiency increased by 4.5 times in optimized formulation F6. From the above results, it can be inferred that the liquisolid technique increases the wetting properties and surface area of glyburide drug particles by changing their properties achieved by dispersing the drug particles in a non-volatile liquid vehicle. It showed that there are no interactions between the drug and excipients. Differential Scanning Calorimetry (DSC) and Fourier Transform Infrared Spectroscopy (FTIR) studies revealed that there was no interaction between drug and polymer. In conclusion, liquisolid technology was successful in improving bioavailability of glyburide.

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