

# Development of CPE modified with MWCNT for determination of azithromycin

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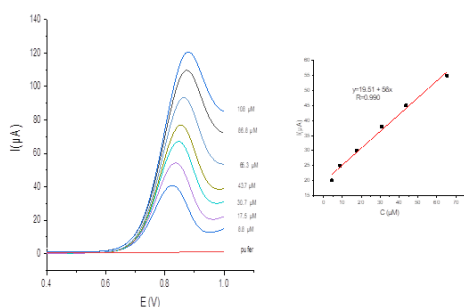
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Although antibiotics have improved in a significantly way our life, the residues in food and the environment have negative effects on human health. Therefore, this study aims to develop a carbon paste electrode (CPE), modified with multi wall carbon nanotubes (MWCNT) for the determination of azithromycin. Azithromycin detection was accomplished via cyclic voltammetry (CV) and square wave voltammetry (SWV). Firstly, modified sensor (CPE/MWCNT) was tested for electroactive properties of the surface in the electrolytic cell in the presence of the redox couple  $Fe^{3+}/Fe^{2+}$ . The experimental parameters, such as pH, the indifferent electrolyte, the amplitude and the frequency were optimized and in these conditions analytical parameters were specified. Afterwards, it is tested in real sample of milk, which eventually resulted contaminated with azithromycin. It was found that the sensitivity of sensor was  $56 \mu A/\mu M$ , the limit detection  $0.047 \mu M$ ,  $R^2=0.9900$  and the relative standard deviation 3.75%. Based on the results, this sensor can be used for the determination of azithromycin in milk samples.

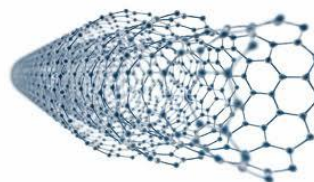
## References

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## Figures



**Figure 1:** SWVs of azithromycin obtained using CPE modified with MWCNT in PBS pH 8.5



**Figure 2:** Modifier of CPE- MWCNT