

Abstract

Gastric cancer is a silent type of cancer that needs reliable tools and screening tests for its early detection in order to increase the rate of survival. Therefore, in this PhD thesis there were developed stochastic and voltametric sensors as screening tools for gastric cancer. Covering wide ranges of linear concentrations with very low detection limits being the only sensors that can make a reliable qualitative analysis of the sample, stochastic sensors were used for the molecular recognition and quantification of p53, maspin as well as enantioanalysis of aspartic acid and arginine in different biological samples: whole blood, tumoral tissues, urine, and saliva. The screening methods were validated and are in use in clinical studies in order to be standardized and approved for the early detection of gastric cancer.