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Thesis Title	Biochemical studies of same tumor markers in oral cancer		
Year	2001		
Abstract	<p>1-The characteristics of the binding of I₁₂₅-CEA antibody to CEA on oral tumor homogenate were investigated using the technical basis of Radio Receptor Assay (RRA). Different factors affecting this binding were studied and the results showed that maximum binding was achieved by using 500µg of homogenate proteins, 0.17µg/ml I₁₂₅-antiCEA concentration, PH7.2, 6 hr and 25°C. The affinity constants (K_a) and Maximum Binding Capacities (B_{max}) were temperature-dependent. The results revealed that CEA binding characteristics were CEA amount, I₁₂₅ -antiCEA amount, PH, time and temperature-dependent.</p> <p>2-Kinetic and thermodynamic studies of the binding reaction were carried out. The time-course of the association of I₁₂₅ -antiCEA with CEA in oral tumor homogenate revealed the time and temperature dependency. Association Kinetics indicates the pseudofirst order Kinetics of the binding of CEA to I₁₂₅ CEA antibody. The Hill-plot data (n=1) indicated that there was no cooperation between the CEA-binding sites.</p> <p>3- A method was developed for the purification and identification of CEA and its complex (CEA-I₁₂₅-antiCEA) from oral tumor homogenates by gel filtration chromatography using Sepharose CL-6B (1.7×29cm) and Sephadex G-50 (0.7×13cm) respectively. Two peaks: 1000KD and 158KD of CEA were eluted with purification fold of 16.5 and 14.7 respectively. The physicochemical properties of CEA and its complex such as, the M.wt., R_s, PI, chromatography, electrophoresis and isoelectric focusing investigated heat stability and biological activity of CEA-complex.</p>		

4- The DNA from whole blood of both :normal and oral cancer patients was extracted and purified . its purified was determined from absorption value at 260 and 280 nm . tnfrared and Ultraviolet spectroscopy revealed the effect of PH and ionic strength on the DNA . by IR the changes were determined in the groups forming the DNA macromolecule and upon comparing the IR spectra of the DNA extracted from normal blood and oral and oral cancer patients blood , adifference was found in the bands referring to the nitrogen bases . IR spectroscopy revealed a change in the DNA structure after denaturation .

5-serum DPP IV and LDH activity were measured in oral cancer patients and healthy subjects, DPP IV activities in sera of cancer patients were insignificantly decreased , compared with those of health sera and no variations were obtained between oral cancer patient and normal individual when serum LDH activity was measured .

6-Trace elements (copper , iron and zinc) were measured in sera of oral cancer patients and healthy subjects by atomic absorption spectrophotometry . serum copper ,iron and zinc did not alter significantly in oral cancer patients investigated . However ,serum copper to zinc ratio was found to be higher in oral cancer patients than those of normal individuals .