

abstract only

Arq. Biol. Tecnol. 30(1), abr., 1987

BIOLOGIA CELULAR E MOLECULARRESUMOS C1 - C70

C1

DEVELOPMENT OF A RADIOIMMUNOASSAY FOR HUMAN CALCITONIN APPLIED TO THE EARLY DIAGNOSIS OF MEDULLARY THYROID CARCINOMA

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Medullary thyroid carcinoma (MTC) is practically the only type of cancer for which a real early diagnosis is possible many years in advance, through the detection of serum Calcitonin (CT), a hypocalcemic hormone secreted by the parafollicular cells. Considering that this malignancy is inherited as an autosomal dominant trait an efficient screening program can be carried out on the relatives of persons already affected by this carcinoma. In order to set up this type of survey in collaboration with the University Hospital (HC-FMUSP) of São Paulo, our laboratory at the IPEN-CNEN/SP started the complete production of the reagents necessary for this radioimmunoassay. Synthetic Human Calcitonin (CIBA) was labelled with ^{125}I , via the conventional and stoichiometric Chloramine T technique, and purified in a comparative way, on Sephadex G-25 fine and G-50 medium. The radiolabelled tracer was further purified on Polyacrylamide Gel Electrophoresis (PAGE) obtaining five reproducible peaks, three of which presenting a specific binding higher than non PAGE-purified ^{125}I -CT and quite comparable to that observed with a good quality imported tracer. A study was carried out on the PAGE densitometric pattern of purified synthetic CT, in comparison with the tracer electrophoretogram, in order to possibly identify the peak corresponding to the monoiodinated molecule. Anti-sera anti-CT were prepared injecting intramuscularly, two rabbits and two guinea-pigs with 100 μg of the synthetic product. Only one guinea-pig antiserum reached, after 9 months and five 50 μg boosters, a titre comparable to literature values. Studies are in progress for obtaining stable, high specific activity tracers, higher antibody titres and, consequently, very sensitive curves.