RES N°42

IMPROVEMENT OF THE RADIOIMMUNOASSAY FOR HUMAN CALCITONIN UTILIZING RADIOIODINATED TRACER REPURIFIED ON POLYACRYLAMIDE GEL ELECTROPHORESIS.

Gimbo, E.K. and Bartolini, P.
IPEN-CNEN/SAO PAULO - BRAZIL

In our laboratory we set up an radioimmunoassay (RIA) for human calcitonin (hCT), using antisera from different sources and as tracer a synthetic hCT (kindly donated by CIBA Switzerland), radioiodinated with 125-I by the Chloramine T method and purified on Sephadex G-50 M chromatography. As the precision of the first assay was inadequate, we tryed to improve it by further purifying the tracer. Polyacrylamide gel electrophoresis (PAGE) was chosen for the re-purification of the tracer, because it is an high resolution, very reproducible and simple technique.
The tracer purified on 7% PAGE, showed five reproducible components, three of which presented immunoreactivity. The purified fraction probably corresponding to monoiodinated calcitonin, was eluted from the gel and incubated in a 1: 8,000 antiserum dilution. At the zero dose the tracer presented a specific binding of about 25%, significantly higher than the usual 13% binding obtained when the tracer was nonPAGE repurified. In fact, when the repurified tracer was used, specific binding were comparable to those observed with a good quality imported tracer (INC).
We conclude that the purification of 125-I-hCT on PAGE provides an alternative to obtain precise and reproducible assays.

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