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UC Davis - Corticosterone RIA

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Protocol status: Working

We use this protocol and it's working

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Keywords: RadiolImmuno Assay(RIA), standardized concentration of antibody, incubation period the standardized concentration, radioimmuno assay, specific to the analyte, analyte in the precipitate, assay method, quantitative concentrations for the analyte, standardized concentration of the analyte, antibody, sites on the antibody, double antibody, bound antibody, precipitating reagent, high concentration of the analyte, low concentration of the analyte, labeled analyte, unknown concentration of analyte, analyte, corticosterone ria summary, standardized concentration, quantification of various protein, analyte of interest, assay, quantitative concentration, incubation period, test tube, concentrations of the standard, precipitate, higher count in the precipitate, known concentration, unknown concentration, high concentration, radioisotope, low concentration

Abstract

Summary:

The RIA (RadiolImmuno Assay) is an assay method used for the quantification of various proteins. A standardized concentration of antibody specific to the analyte of interest is pipetted into test tubes. A standardized concentration of the analyte of interest that is labeled with a radioisotope (usually ^{125}I) is added to the tubes. Standards and samples are pipetted into the tubes and the tubes are incubated. During the incubation period the standardized concentration of labeled analyte and the unknown concentration of analyte in the samples will compete for binding sites on the antibody. After the incubation period a precipitating reagent is added to the tubes and the bound antibodies are precipitated out using the double antibody-polyethyleneglycol precipitation technique. The tubes are centrifuged and the supernatant is aspirated and the precipitate is counted (using a gamma counter if ^{125}I is used). If there is a low concentration of the analyte of interest in the samples, the labeled analyte will have a higher probability for binding to the antibody and thus there will be a higher count in the precipitate. If there is a high concentration of the analyte of interest in the samples there will be a lower count of labeled analyte in the precipitate. The counts and known concentrations of the standards are used to generate a standard curve, and the counts of the samples are used to interpolate quantitative concentrations for the analyte of interest from the standard curve.



Materials

MATERIALS

 Corticosterone Kit **MP Biomedicals Catalog #07120102**

Note:

MP Biomedicals, RRID:SCR_013308

Corticosterone Kit, Cite this, (MP Bio Cat# 07120102, RRID:AB_2783720)



- 1 Dilute samples 1:200 with steroid diluent.
- 2 Add 0.3 ml diluent to NSB tubes and 0.1 ml to zero tubes.
- 3 Add 0.1 ml of calibrators and diluted samples.
- 4 Add 0.1 ml of tracer to all tubes.
- 5 Add 0.1 ml of antibody to all tubes except Total Count and NSB tubes.
- 6 Incubate at RT for 2 hrs.
- 7 Add precipitating reagent and centrifuge at 3000 rpm at 4°C for 30 min.
- 8 Aspirate supernatant without disturbing the pellet.
- 9 Count precipitate with gamma counter. Calculate standard curve and unknown values.