

IMPROVEMENT OF THE DYNAMIC RANGE IN
SPECIFIC BINDING ASSAYS

ABSTRACT

A specific binding assay method particularly useful for measuring ligands having a wide concentration range has been discovered comprising contacting a liquid sample containing a ligand to be measured with a first receptor R_1 specific for the ligand, R_1 being immobilized on a water-insoluble substrate; a labeled, unbound second receptor R_2 specific for the ligand; and (iii) an unlabeled, unbound third receptor R_3 specific for the ligand, wherein R_2 and R_3 are present in a ratio of $R_2:R_3$ of from about 1:50 to about 1:1000 and R_3 is the same as R_1 , R_2 , or a mixture thereof, to obtain a water-insoluble complex of R_1 , ligand, and R_2 ; (b) separating the water-insoluble complex from the liquid sample and unreacted R_2 ; and (c) measuring either the amount of R_2 associated with the water-insoluble complex or the amount of unreacted R_2 as an indication of the amount of the ligand in the sample. An analytical element has also been discovered comprising a porous spreading zone and in the porous spreading zone, or a different zone, a first receptor R_1 specific to the ligand, R_1 being immobilized on a water-insoluble particulate substrate; a labeled, unbound second receptor R_2 specific for the ligand; and an unlabeled, unbound third receptor R_3 specific for the ligand, wherein R_2 and R_3 are present in a ratio of $R_2:R_3$ of from about 1:50 to about 1:1000, and R_3 is the same as R_1 , R_2 , or a mixture thereof.

(no drawing to accompany abstract)