excretes one type of monoclonal antibody and can be kept alive and grown in unlimited quantities.
Most often, the antibodies are used to detect adducts with a so-called competitive ELISA (enzyme-linked immunosorbent assay; Figure 1). A fixed amount of

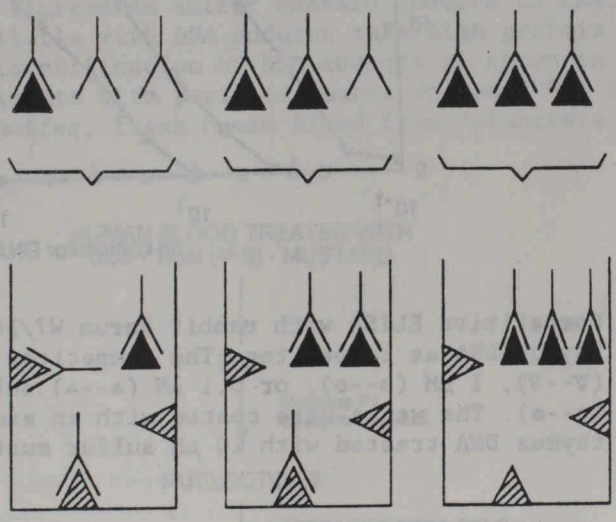

Figure 1 Scheme for a competitive ELISA. The upper part of the Figure symbolizes the preincubation of a fixed amount of antibodies (forkshaped symbols) with three different amounts of the antigen to be detected (black triangles). The lower part symbolizes the situation after the preincubation mixtures have been incubated in the wells of a plastic microtiter plate coated with excess of a different antibody-binding antigen (striped triangles). In the subsequent steps, the antibody molecules bound to the coating antigen are assayed quantitatively.

antibody is mixed with various amounts of the antigen that should be analyzed. Each of these mixtures is added to a small plastic well, which is coated with a fixed amount of another antigen which also can bind the antibody. The surplus antibody in the mixture is allowed to bind to the antigen attached to the wall. Next, the wells are washed, leaving the coating antigen-antibody complexes behind. Then, another antibody bearing an enzyme is added, which has affinity for the first antibody and is bound to the antigen-antibody complex. The enzyme splits a substrate into a product which is measured, e.g., fluorometrically.
The more antibody is bound to the first antigen, the less of it binds to the coating antigen. In this way, a dilution series of the analyte produces sigmoid curves as shown in Figure 2. With increasing concentration of adduct-containing