Lipprotein (a) in Serum- Lp(a) is measured immunochemically by using an enzyme-linked immunosorbant assay (ELISA). The sample is added to a microtiter plate with wells that have been precoated with a monoclonal antibody (capture antibody) to apo(a), the unique protein contained in Lp(a). Lp(a) in the sample is thus bound to the plate-bound antibody. Excess sample is removed, the well is washed extensively, and a polyclonal antibody to apo (a) (a detection antibody) to which a marker enzyme (alkaline phosphatase) is covalently bound, is added. The detection antibody binds to the plate-bound Lp(a). Following removal of excess detection antibody, the well is washed extensively. A substrate (p-nitrophenyl phosphate) for the marker enzyme is added, the plate is incubated, and the reaction is stopped by adding NaOH. The amount of yellow p-nitrophenol produced is proportional to the Lp(a) concentration. The reaction sequence is as follows:

Monoclonal Ab + Lp(a) -----> Mab-Lp(a) (immobilized complex)

Mab-Lp(a) + polyclonal Ab-marker enzyme ----->Mab-Lp(a) - polyclonal Ab-marker enzyme complex

Complex + p-nitrophenyl phosphate -----> p-nitrophenol

-from *Laboratory Procedures Used for the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994*
Elaine W. Gunter, Brenda G. Lewis, and Sharon M. Koncikowski, 1996