

CONNECTIONS BETWEEN DISCOVERIES AND THEIR USE IN SERVICE TO SOCIETY

NANOPARTICLE-BASED BIO-BAR CODES FOR THE ULTRASENSITIVE DETECTION OF PROTEINS

Jwa-Min Nam, Shad C. Thaxton, Chad A. Mirkin, *Science*, **2003**, (5641), 1884–1886.

A method to detect target proteins at levels approximately six orders of magnitude lower than comparable clinically accepted methods has been developed. The nanoparticle-based bio-bar code system uses magnetic microparticle probes coated with antibodies that specifically bind to a target of interest; in this case prostate-specific antigen (PSA) was used. The methodology is faster, simpler, and far more sensitive than current techniques and is designed with the potential to detect hundreds of proteins. The groundbreaking technique could eventually enable doctors to diagnose illnesses in very early stages – long before they overwhelm the body.

