

**Surface Plasmon Resonance Dual-Channel Refractometer  
SR7000DC  
Application Note III**

**Prostate Specific Antigen Binding to Anti-Prostate Specific Antigen  
Immobilized on a Planar Surface**

## Introduction

This application describes the binding of an antigen-antibody system that is of high scientific interest, namely the binding of prostate specific antigen (PSA) to anti-PSA that is immobilized on a planar surface. Figure 1 presents typical binding response profiles from the binding event between anti-PSA and PSA. The concentrations of PSA that are flowed over the sensor surface are 200, 67, 22, 7.4, and 2.5 nM. Each concentration was injected at least twice to illustrate reproducibility. Binding curves are normalized with respect to response and time and are presented in Figure 1.

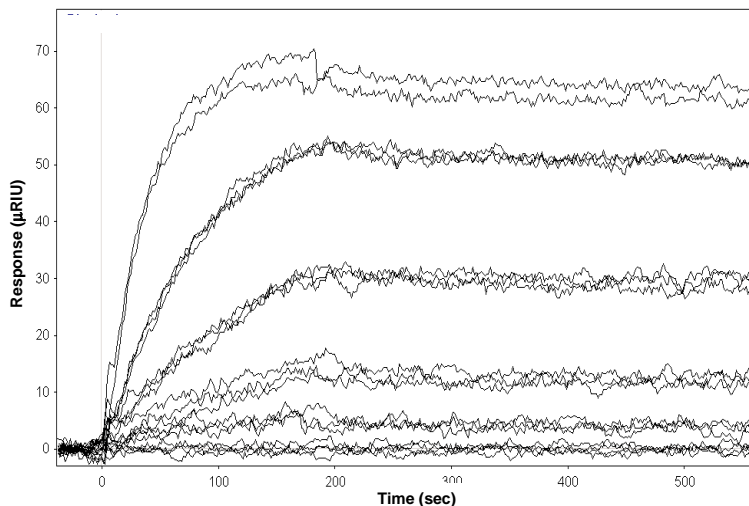


Figure 1: Normalized response vs. time plot of the PSA injections.

## Data Analysis

The data in this study (PSA binding to anti-PSA) was fit to a simple bimolecular model. The associations and dissociations were fit globally using Scrubber (BioLogic Software). The results are summarized in the following Table:

| $k_a$ ( $s^{-1} M^{-1}$ ) | $k_d$ ( $s^{-1}$ )     | $R_{max}$ ( $\mu RIU$ ) | $K_D$ (pM) |
|---------------------------|------------------------|-------------------------|------------|
| $1.553 \times 10^5$       | $1.083 \times 10^{-4}$ | 64.02                   | 694        |

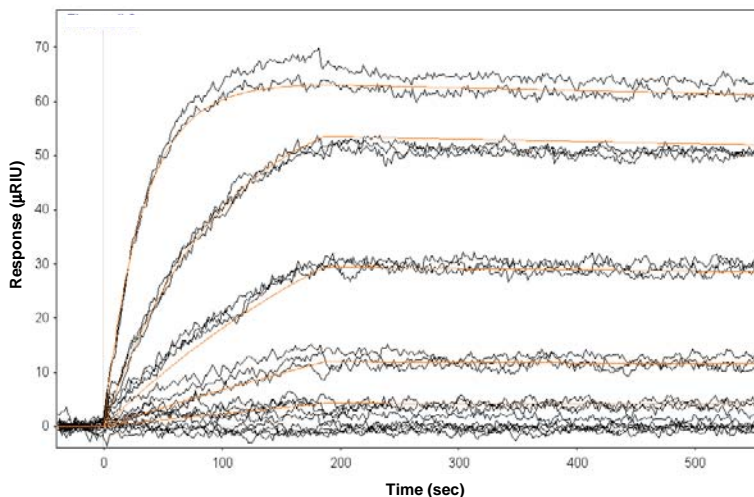


Figure 2: Globally fitted data from Scrubber using the simple bimolecular model.