SARTORIUS

Product Datasheet

Octet® Ni-NTA Biosensors

For Quantitation and Kinetic Characterization of His-Tagged Biomolecules

Key Features

- Direct and rapid quantitation of HIS-tagged biomolecules
- Easy capture of HIS-fusion proteins for kinetic analysis
- Designed for use in buffer and diluted complex media
- Compatible with Octet® platforms

Overview

The penta- or six-histidine peptide tag (HIS) is commonly fused to recombinant proteins to expedite capture, detection, and purification. The robustness of the HIS tag and its ease of use have established it as one of the most commonly used tags in the bio-pharma industry. The Dip and Read Ni-NTA (NTA) Biosensor is pre-immobilized with novel nickel-charged Tris-NTA from QIAGEN™, and enables an easy and rapid method of kinetic characterization (Figure 1) and quantitation (Figure 2) of HIS-tagged biomolecules. The strong binding of Ni2+ to the HIS-tag makes the Ni-NTA Biosensor particularly suitable for stable capturing of HIS-tagged proteins for affinity measurements.

Flexibility and Versatility

The Ni-NTA Dip and Read Biosensor is qualified for both quantitation and kinetic applications. It enables scientists to quickly and easily detect HIS fusion proteins for quantitation purposes, or to capture HIS fusion proteins for affinity measurements with other analytes. Together with the ease of use on the Octet® N1 platform or the high throughput provided by the Octet® systems, the Ni-NTA Biosensors greatly accelerates laboratory workflow by reducing time to results. Full compatibility with the BLItz® platform further enables the measurement of precious samples with a sample volume requirement as low as 4 µL.

For easy regeneration, the captured HIS fusion protein and its binding partner can be removed by exposing the biosensor to 10 mM Glycine pH 1.7 followed by a neutralization buffer (typcally 1X Kinetics Buffer). After regeneration, the biosensor can be re-charged with 10 mM NiCl2, then re-loaded with HIS fusion protein again for new measurement.

For technical information on the Ni-NTA Biosensor see Technical Note 31 (*Ni-NTA Biosensor Kinetic Assays*) and Technical Note 32 (*Ni-NTA Biosensor Quantitation Assays*).

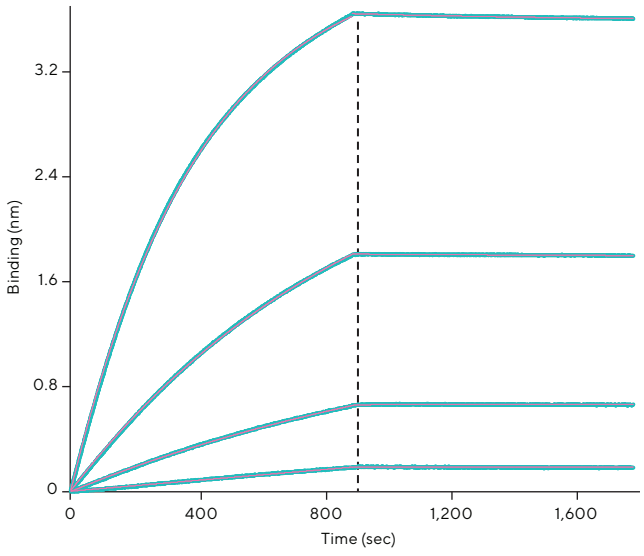

Figure 1: Kinetic analysis of the interaction between HIS-endostatin and an interaction partner anti-endostatin. 1X Kinetics Buffer was used as the matrix throughout and the assay temperature was 30°C. Data were processed and curve fit using a 1:1 binding model. The kinetic results are reported in Table 1.

k_{on}	k_{off}	K_D
$8.1x10^{4}$ 1/M s	$1.8x10^{-5}$ 1/s	0.22 nM

Table 1: Kinetic results for the interaction between HIS-endostatin and anti-endostatin using Ni-NTA Biosensors.

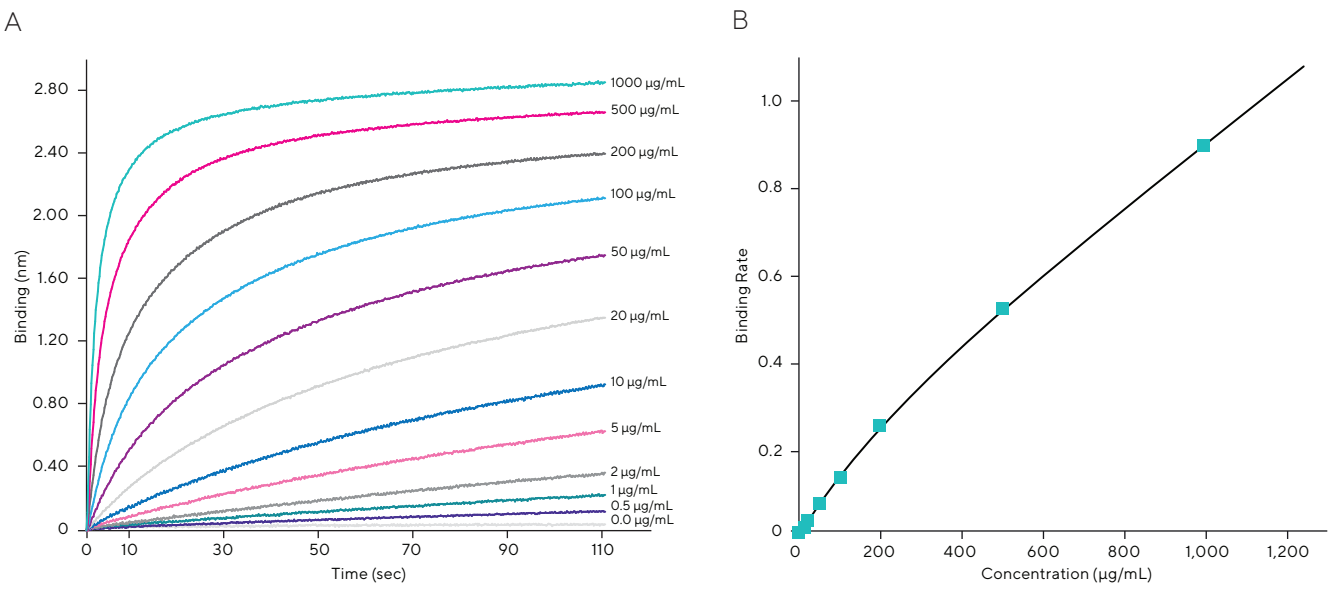

Figure 2: Quantitation of a concentration series of a HIS-Protein A standard using Ni-NTA Biosensors on an Octet® RH16 system with assay parameters for a standard dynamic range. (A) Concentration measurement at 1000 rpm and 2 minutes read time. (B) Calibration curve calculated from measuring the standard concentration series. Sample Diluent was used as the matrix for all samples.

Range of Applications

The Ni-NTA Biosensor offers researchers unparalleled ease of use and time-to-result in a wide range of laboratory applications such as:

- Rapid quantitation of HIS fusion proteins
- Affinity characterization of interactions between HIS fusions and binding partners
- Efficient workflow for epitope binning/mapping
- Process optimization in development and quality control

Ordering Information

Part No.	UOM	Description
18-5101	Tray	One tray of 96 Octet® NTA Biosensors
18-5102	Pack	Five trays of 96 Octet® NTA Biosensors
18-5103	Case	Twenty trays of 96 Octet® NTA Biosensors

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