dynamic BIOSENSORS HK-NTA-1 v4.1 HIS Capture Kit User Manual

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dynamic BIOSENSORS HK-NTA-1 v4.1 HIS Capture Kit

Product Specifications

- **Product Name:** heliX+ HIS CAPTURE KIT with red dye Ra
- **Order Number:** HK-NTA-1
- **Key Features:**
  - 2 spots with 2 different anchor sequences for DNA-encoded addressing
  - Spot 1 is functionalized with the capture molecule while Spot 2 is used as real-time reference

Product Description

Material	NTA – Ligand st rand	Adapter strand 1 – Ra	Adapter strand 2 – Ra	Loading Solution (NiCl2)	Imidazole Sol ution
Color	Red	Black	White	Transparent	Transparent
Concentra tion	500 nM	400 nM	200/250 nM	10 mM	250 mM

Buffer: TE40 [1] For research use only. This product has a limited shelf life, please see expiry date on label. After preparation of ready to use solution, the expiry date is 6 months.

Preparation:

1. Assay Setup in heliOS: Go to heliOS > create a New Assay Workflow > add Custom Assay > load His Capture with Kinetics > modify the parameters based on your needs and run the assay.
2. Suggested assay parameters (e.g., flow rate, time, LED power, etc.) are within the heliOS assay.
3. If the stability of his capture is affected by the protein, in case of long dissociations, consider using the conjugation approach.

Contact Information

- Dynamic Biosensors GmbH
  Perchtinger Str. 8/10
  81379 Munich Germany
- Dynamic Biosensors, Inc.
  300 Trade Center, Suite 1400
  Woburn, MA 01801 USA
- **Order Information:** order@dynamic-biosensors.com
  Technical Support: support@dynamic-biosensors.com

FAQ

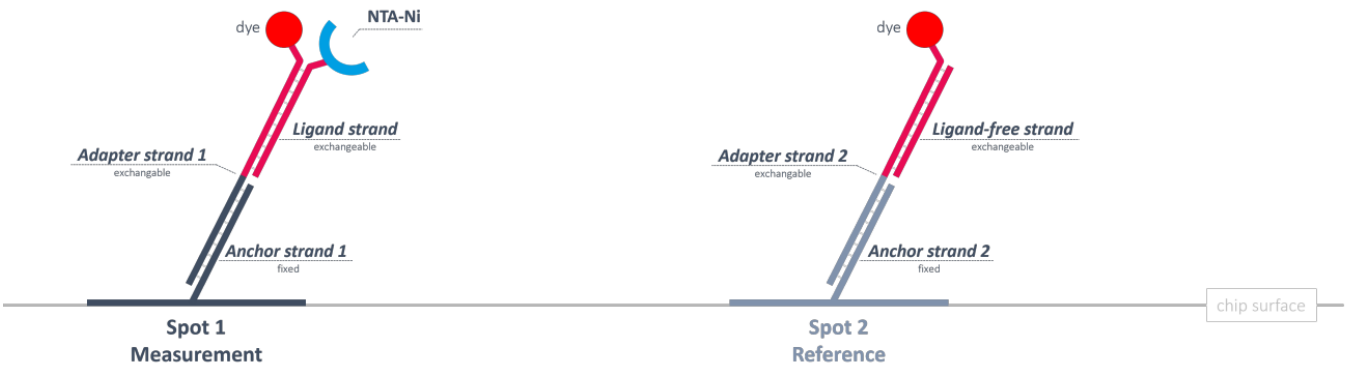
- **What is the shelf life of the product?**
  The shelf life of the product is limited. Please check the expiry date on the label. After preparing the ready-to-use solution, the expiry date is 6 months.
- **How can I regenerate the chip surface?**
  The chip surface can be regenerated either by injection of a high pH solution followed by a new hybridization of fresh DNA-NTA or by simple removal of the his-tagged protein via imidazole wash.

Key Features

- This kit is designed for capture of histidine-tagged proteins (His6 or His10) using Tris-NTA.
- Compatible with heliX® Adapter Chip.
- Includes Adapter strands and Ligand strand modified with Tris-NTA for 20 regenerations.
- For functionalization of Spot 1 and Spot 2.
- Adapter strands 1 and 2 carry a moderately hydrophilic red dye (Ra) with a single positive net charge.

heliX® Adapter Chip Overview

2 spots with 2 different anchor sequences for DNA-encoded addressing. Spot 1 is functionalized with the capture molecule while Spot 2 is used as real-time reference.



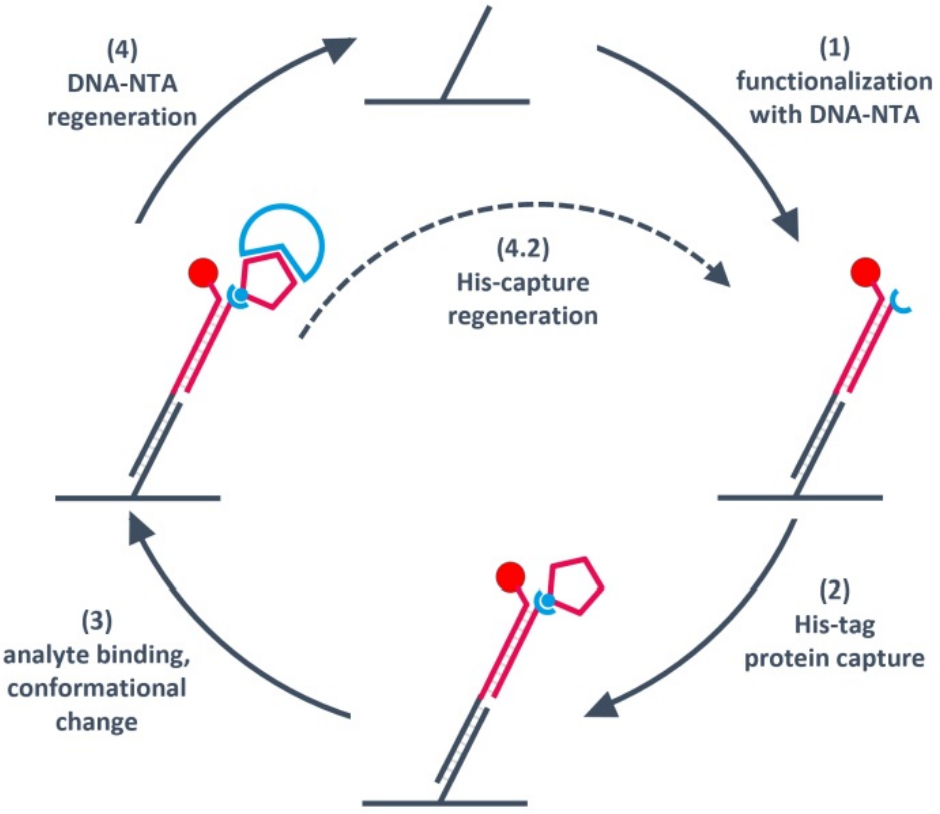
Product Description

Order Number: HK-NTA-1

Material	Cap	Concentration	Amount	Buffer	Storage
NTA – Ligand strand	Red	500 nM	2 x 100 µL	TE40 [1]	-20°C
Adapter strand 1 – Ra	Black	400 nM	2 x 100 µL	TE40 [1]	-20°C
Adapter strand 2 – Ra – Ifs	White	200/250 nM	2 x 200 µL	TE40 [1]	-20°C
Loading Solution ($NiCl_2$)	Transparent	10 mM	5 x 1500 µL	TE40 [1]	-20°C
Imidazole Solution	Transparent	250 mM	10 x 2000 µL	T2]E140 [	-20°C

- For research use only.
- This product has a limited shelf life, please see expiry date on label.
- After preparation of ready to use solution the expiry date is 6 months.

Workflow of a heliX® His – capture assay



1. The anchor strand (ssDNA) immobilized to the surface of the heliX® Adapter Chip is hybridized with complementary DNA strands modified with Tris-NTA (Nitrilotriacetate).
2. NTA-DNA surface is activated by loading with divalent nickel ions. His-tagged protein (ligand) is captured on the surface.
3. Measurement of the analyte binding kinetics or conformational change upon analyte binding.
4. Surface regeneration either by injection of a high pH solution followed by a new hybridization of fresh DNA-NTA or by simple removal of the his-tagged protein via imidazole wash.

Preparation

1. Mix 100 µL NTA – Ligand strand with 100 µL Adapter strand 1 – Ra.
2. Incubate the solution of step 1 at RT at 600 rpm for 30 min to ensure complete hybridization.
3. Mix 200 µL Adapter strand 2 – Ra – lfs to the sample after step 2.

- The solution (400 µL in total) is ready to use for a biochip functionalization.
- Please aliquot and store the ready to use solution at -20°C. Use up within 6 months.
- The kit contains material for the preparation of two separate ready to use solutions with 400 µL each.

Assay Setup in heliOS

- Go to heliOS > create a New Assay Workflow > add Custom Assay > load His Capture with Kinetics > modify the parameters based on your needs and run the assay.
- Suggested assay parameters (e.g., flow rate, time, LED power, etc.) are within the heliOS assay.
  TIP As the stability of his capture is affected by the protein, in case of long dissociations, consider using the conjugation approach.
- For further questions, please contact the support team at **support@dynamic-biosensors.com**.

Useful Order Numbers

Product Name	Comment	Order No
heliX® Adapter Chip	Chip with 2 detection spots	ADP-48-2-0
10x Passivation solution	For passivation of chip surface	SOL-PAS-1-5
Regeneration solution	For regeneration of chip surface	SOL-REG-1-5

Contact

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  300 Trade Center, Suite 1400
  Woburn, MA 01801
  USA
- **Order Information** order@dynamic-biosensors.com
- **Technical Support** support@dynamic-biosensors.com
- **www.dynamic-biosensors.com**
  Instruments and chips are engineered and manufactured in Germany.

Documents / Resources

	dynamic BIOSENSORS HK-NTA-1 v4.1 HIS Capture Kit [pdf] User Manual HK-NTA-1 v4.1 HIS Capture Kit, HK-NTA-1 v4.1, HIS Capture Kit, Capture Kit, Kit

References

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