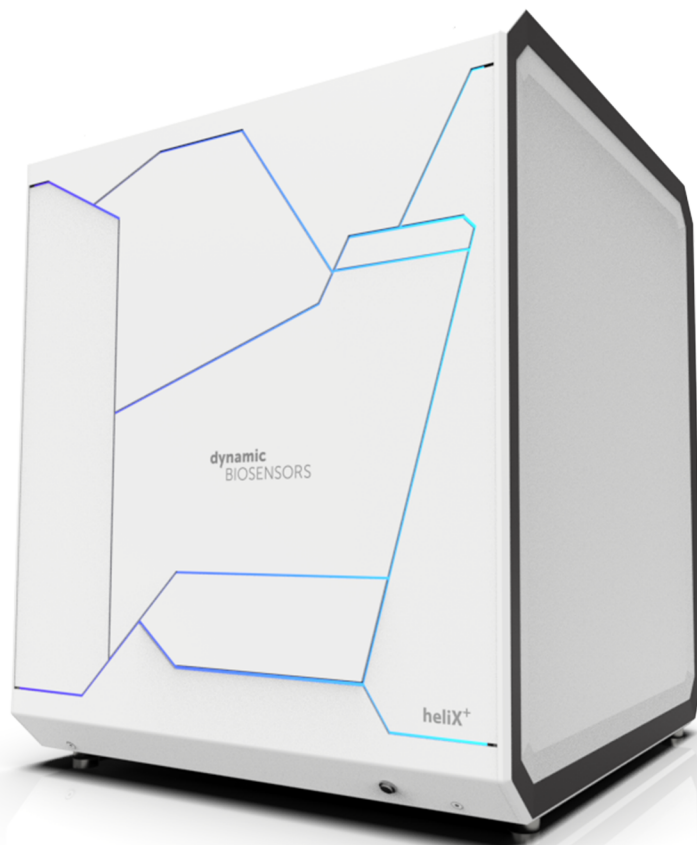


## RNA enzyme activity kit

with red dye **Ra**

Dynamic Biosensors GmbH & Inc.

HK-EA-2 v1.1

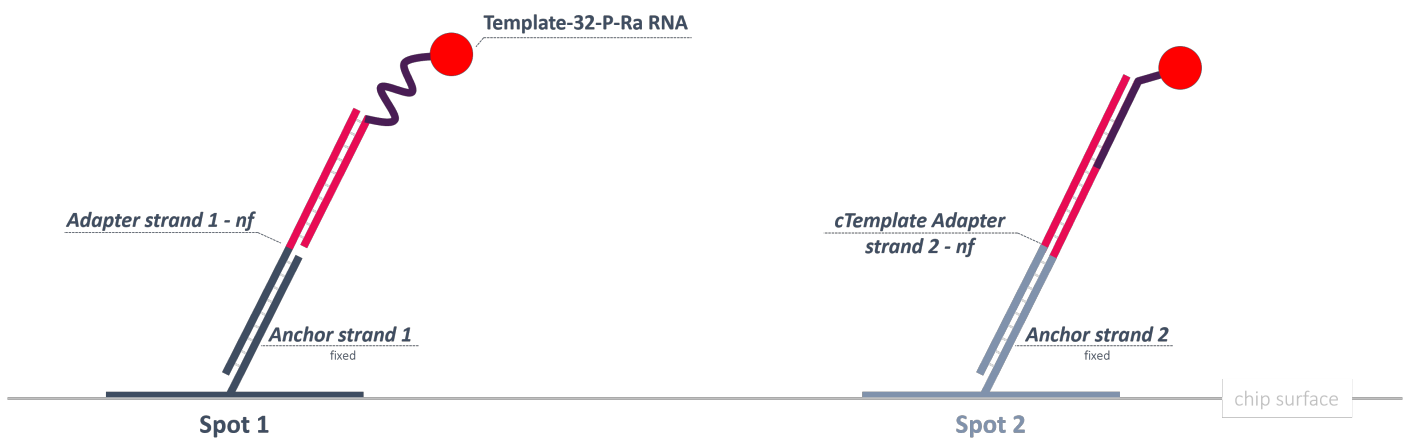


## Key Features

- **ssRNA template** (48 + 32 bp) for functionalization of **heliX<sup>®</sup> Adapter Chip** on **Spot 1**.
- **dsDNA-RNA template** (48 + 32 bp) for functionalization of **heliX<sup>®</sup> Adapter Chip** on **Spot 2**.
- Compatible with **heliX<sup>®</sup> Adapter Chip**.
- Includes **Adapter strands** for **100 regenerations**.
- This **RNA template** carry a moderately hydrophilic red dye (**Ra**) with a single positive net charge.

## heliX<sup>®</sup> Adapter Chip Overview

2 spots with 2 different anchor sequences for **RNA-encoded** addressing.



## Product Description

Order Number: **HK-EA-2**

Table 1. Contents and Storage Information

Material	Cap	Concentration	Amount	Buffer	Storage
<b>Adapter strand 1 - nf / Template-32-P-Ra RNA</b>	White	200/250 nM	10 x 100 µL	TE40 <sup>[1]</sup>	-20°C
<b>cTemplate Adapter strand 2 - nf / Template-32-P-Ra RNA</b>	Black	200/250 nM	10 x 100 µL	TE40 <sup>[1]</sup>	-20°C

For research use only.

This product has a limited shelf life, please see expiry date on label.

To avoid many freeze thaw cycles please aliquot the nanolever.

## Preparation

### IMPORTANT

Both **Adapter strands** are already pre-hybridized. **Adapter strand 1** to the Template-32-P-Ra RNA strand, leaving the upper part as ssDNA, and **cTemplate-Adapter strand 2** to the Template-32-P-Ra RNA strand, leaving Spot 2 completely as dsDNA-RNA.

Next, simply mix in the same vial the **Adapter strand 1 - nf / Template-32-P-Ra RNA** (200/250 nM) and the **cTemplate Adapter strand 2 - nf / Template-32-P-Ra RNA** (200/250 nM) at 1:1 ratio (v/v).

Solution is ready to use for biochip functionalization.

## Useful Order Numbers

Table 2. Order Numbers

Product Name	Comment	Order No
heliX <sup>®</sup> 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

## Assay Setup in heliOS

For studying **enzymatic activity** of a **nucleic acid modifying enzyme** (e.g., **polymerase**, **reverse transcriptase**, **helicase**, etc.).

Go to **heliOS** > create a **New Assay Workflow** > add **Custom Assay** > load **Enzyme Binding and Activity** > modify the parameters based on your needs and run the assay.

Suggested assay parameters (e.g., flow rates, functionalization time, LED power, etc.) are within the **heliOS** assay.

### TIP

Is strongly recommended to perform binding kinetics of the enzyme beforehand. The obtained  $K_d$  during enzyme kinetics can be the initial test concentration for the association of the enzyme during enzyme kinetics. This concentration is a good compromise to not overcrowd the surface and avoid multiple enzymes binding to the same template.

### TIP

For an initial scouting of the substrate, choose a broad concentration splitting spanning the low nanomolar to high micromolar, and a blank. A minimum of 6 concentrations of substrate are recommended to obtain a reliable sigmoidal fit during the extraction of the  $k_{cat}$  and  $K_M$ .

For inhibition assay, analysis or any further questions, please contact the support team at [support@dynamic-biosensors.com](mailto:support@dynamic-biosensors.com).

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Instruments and chips are engineered and manufactured in Germany.

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