heliX+
User Manual

dynamic
BIOSENSORS

DENSITY CONTROL KIT

complementary Anchor strand 1 and 2

Dynamic Biosensors GmbH & Inc.
DC-0 v5.1

Key Features

- **Complementary Anchor strand 1** and **complementary Anchor strand 2** for low density generation of **heliX® Adapter Chip Spot 1** and **Spot 2**.
- Compatible with **heliX® Adapter Chip**.
- Ideal for **MIX&RUN** sample preparation.
- This kit enables to modulate the ligand density on the sensor surface.

heliX® Adapter Chip Overview

2 spots with 2 different anchor sequences for DNA-encoded addressing.

Product Description

Order Number: **DC-0**

Table 1. Contents and Storage Information

Material	Cap	Concentration	Amount	Buffer	Storage
cAnchor strand 1	Red	200 nM	5 x 200 µL	TE40 [1]	-20°C
cAnchor strand 2	Red	200 nM	5 x 200 µL	TE40 [1]	-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.

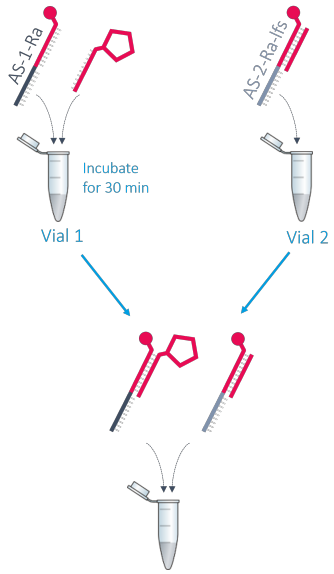
Preparation | MIX&RUN

In-solution hybridization of adapter and ligand strands:

1. Mix ***Adapter strand 1 - Ra*** (400 nM) and conjugated ***Ligand strand*** (500 nM) at 1:1 ratio (v/v).
2. Incubate the solution of step 1 at **RT** at **600 rpm** for **30 min** to ensure complete hybridization.
3. Mix solution of step 2 and ***Adapter strand 2 - Ra - lfs*** (200 nM) at 1:1 ratio (v/v).

Solution is ready to use for biochip functionalization.

Stability of the solution is related to the stability of the ligand molecule.



Preparation | Ligand Density Variation

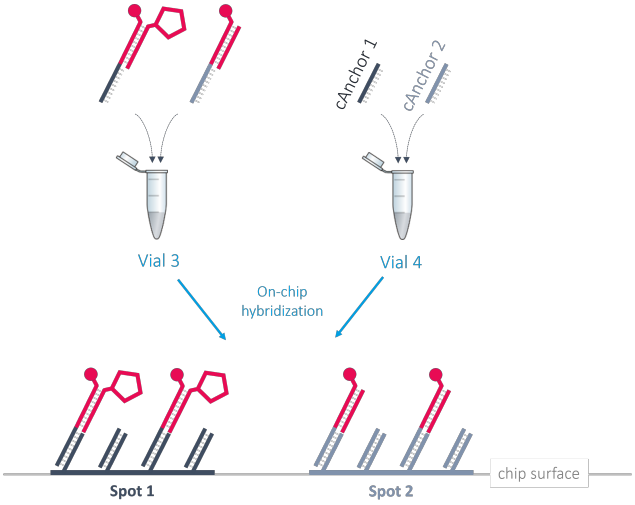
Easy modulation of ligand density on the sensor surface:

4. Mix **cAnchor strand 1** and **cAnchor strand 2** at 1:1 ratio (v/v).

5. Mix solution of step 3 and solution of step 4 at the ratio of desired on-chip density, e.g.:

a. 1:1 ratio (v/v) for a 50% ligand density
b. 1:2 ratio (v/v) for a 30% ligand density
c. 1:9 ratio (v/v) for a 10% ligand density

Solution is ready to use for biochip functionalization.



Example

Required volume for 3 functionalizations: **100 µL** with a final **ligand density** of **10 %**.

Vial 3	Vial 4	
Adapter strand 1 - Ra with ligand (100 nM) ***Adapter strand 2 - Ra - lfs*** (100 nM)	**cAnchor strand 1** (200 nM)	**cAnchor strand 2** (200 nM)
10 µL	45 µL	45 µL

Mix vial 3 and vial 4 to obtain 100 µL of ready-to-use DNA solution.

Useful Order Numbers

Table 2. Order Numbers

Product Name	Comment	Order No
heliX® Adapter Chip	Chip with 2 detection spots	ADP-48-2-0
heliX® Amine Coupling Kit 1	For five individual conjugation reactions	HK-NHS-1
Adapter strand 1 - Ra	400 nM	AS-1-Ra
Adapter strand 2 - Ra - lfs	200 nM, prehybridized with Ligand-free strand	AS-2-Ra-lfs

Contact

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Instruments and chips are engineered and manufactured in Germany.

[**1**] TE40: 10 mM Tris, 40 mM NaCl, 0.05 % Tween20, 50 µM EDTA, 50 µM EGTA