dynamic BIOSENSORS

# switchSENSE® Biochip BIF2-96-2-G1R1-S

## Product Description

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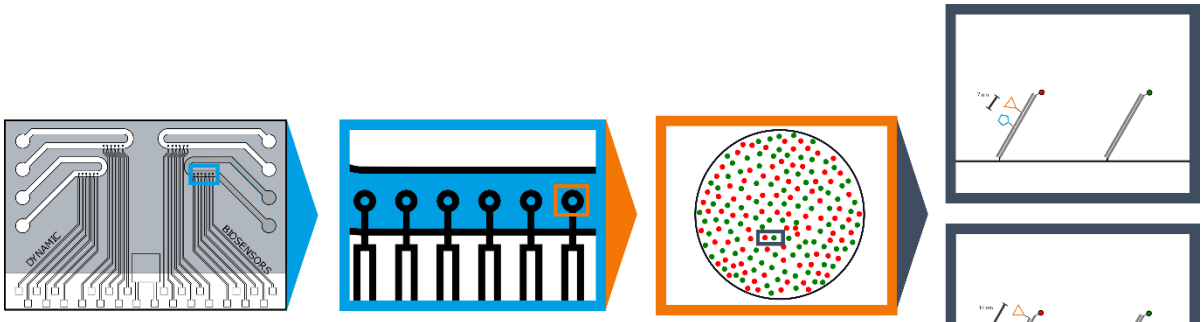
|---|---|
| Product Code | BIF2-96-2-G1R1-S |
| Suitable for | switchSENSE® DRX$^{red}$ & DRX$^{2}$ |
| Storage | Store at 2-8 °C, dry in the dark |
| Layout | 6 double reference spots (nanolever A/B) |
| Grade | Standard |

Bi-functional chips offer a very flexible and powerful platform to study bi-functional antibodies, e. g. to discriminate between complex binding modes (monovalent versus bivalent or bispecific).

## Biochip Design




Biochip with 4 flow channels, each with multiple detection spots in series

6 detection spots in 1 flow channel

Each detection spot: nanolevers with green and red fluorescent dyes

Nanolevers with the same sequence and fluorescent dye

The detection spots are functionalized with two different nanolevers, NL-A96 and NL-B96. The 5‘-end of the DNA is fixed on the surface while the 3‘-end carries a fluorescent dye, either a green one (G1) on NL-A96 or a red one (R1) on NL-B96.
For functionalization either CK-NH2-5-B96 or CK-NH2-6-B96 are available. The first kit provides the possibility to bind two antigens in a distance of 7 nm on the nanolever B96, the later features a distance of 14 nm for the two antigens.

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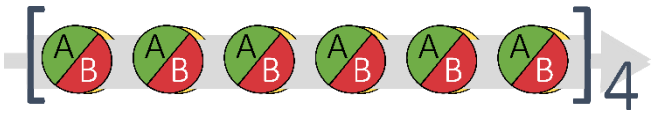
## Flow channel with 6 double (A, B) spots (real-time on-spot referencing or sophisticated assays)

BIF2 biochips carry a mixture of two nanolever populations (red & green) on the same sensor spot. Use one nanolever as the target and the other as the control for absolute data confidence. Beyond that one can use this set-up to investigate more complex and challenging issues.




*For more information about the DNA sequences, please contact us at info@dynamic-biosensors.com.*

## Application Areas

| | |
|---|---|
| *Binding Kinetics** | $k_{on}$, $k_{off}$, $K_D$ |
| *Binding Affinity** | $K_D$, *titration curve, n (Hill coefficient)* |
| *Protein Diameter** | $D_H$ *(Hydrodynamic diameter)* |
| *Conformational Change** | $\Delta D_H$ *(relative change of hydrodynamic diameter)* |
| *Melting & Thermodynamics** | $T_M$, $\Delta G$, $\Delta H$, $\Delta S$ |
| *Multimers & Aggregation** | *Monomer-dimer discrimination, aggregation* |
| *Nuclease & Polymerase Activity** | $k_{cat}$, $K_M$, $T_{activate}$ |
| **Bispecific Binders & Avidity** | **Binding affinity/avidity/kinetics** |

** for this application, other biochips (MPC or ENZ) are recommended*

## Biochip Handling

The biochip is ready to use. For research only.
Always use a vacuum tweezer to protect the biochip against electrostatic discharge! Keep in mind the negatively charged DNA layer can be harmed by electrostatic discharge, e.g. by touching. After installing the biochip in a DRX$^{red}$ or a DRX$^{2}$ instrument and before starting an experiment be sure that the selected channel is passivated with passivation solution (Order No. SOL-PAS-1-5).

## Grade I Standard

Standard grade chips are batch tested which means one out of a batch undergoes a comprehensive quality control – proper switching dynamics, calibration (voltage-response of the DNA layer) and fluorescence levels. In addition each biochip is tested for proper fluorescence levels on each electrode. Due to the production process not all detection spots fulfill our high quality standards. Each standard grade biochip is certified as having 20 or more active detection spots.
We recommend standard grade biochips for testing new assays and to gain first results.

## Compatible Functionalization Kits

The following functionalization kits can be used with this biochip:

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|---|---|
| CK-NH2-5-B96 | **Amine coupling kit 5 for 96 mer**<br>for bi-functional analytes; two antigens (distance 7 nm) - one nanolever NHS modifier, sufficient for 5 different conjugations |
| CK-NH2-6-B96 | **Amine coupling kit 6 for 96 mer**<br>for bi-functional analytes; two antigens (distance 14 nm) - one nanolever NHS modifier, sufficient for 5 different conjugations |

## Contact


### Technical Support

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### Order Information

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