

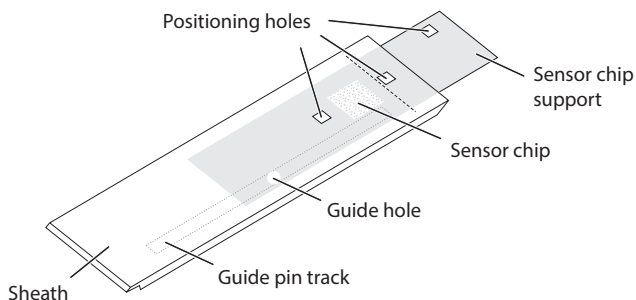
# Sensor Chip CM4

## Instructions for Use

### Product description

Order code: BR-1005-39 (package of three sensor chips)

Storage: The use-before date applies to chips stored at +2°C to 8°C in unopened pouches.



**Note:** For *in vitro* use only.

The sensor chip is fixed to a polystyrene support sheath. Each cassette, consisting of a sensor chip and sheath assembly, is individually packed under a nitrogen atmosphere in a sealed pouch.

## Application areas

Sensor Chip CM4 is designed for interaction analysis in Biacore™ systems. The surface has a carboxymethylated dextran matrix covalently attached to a gold film. Ligands ranging from small molecules to proteins, nucleic acids, and carbohydrates may be attached via covalent coupling using well-established chemistries. Alternatively, a capturing molecule may be coupled for subsequent capture.

Sensor Chip CM4 has a lower degree of carboxylation than Sensor Chip CM5 and is consequently less negatively charged. This may be an advantage for example for reducing non-specific binding when using positively charged analytes or crude samples such as cell culture supernatants and cell homogenates.

Due to the lower degree of carboxylation, immobilization levels will typically be around 30% of those obtained on Sensor Chip CM5 under comparable conditions.

Refer to [cytiva.com/biacore](http://cytiva.com/biacore) for updates on applications and scientific publications.

## Preparations for use

Step	Action
1	If working in a humid environment, allow the sealed sensor chip pouch to equilibrate at room temperature for 15 to 30 minutes in order to prevent condensation on the chip surface.
2	Prepare the Biacore instrument with running buffer. The buffer should be filtered (0.22 µm), and degassed for systems that do not have an integrated buffer degasser.
3	Open the sensor chip pouch. Make sure that the sensor chip support remains fully inserted into the sheath at all times.
4	Dock the sensor chip in the instrument as described in the instrument handbook. Sensor chips that are not docked in the instrument should be stored in closed containers.

## Immobilizing the ligand

The ligand or capturing molecule is covalently bound to the sensor chip surface via carboxyl groups on the dextran. Functional groups on the molecule that can be used for coupling include -NH<sub>2</sub>, -SH, -CHO, -OH, and -COOH.

Refer to Biacore Sensor Surface Handbook for more detailed information on immobilization strategies and procedures.

# Interaction analysis

Interaction analysis is performed by injecting sample over the sensor chip surface. The covalently immobilized molecule either participates directly in the interaction under study or is used for affinity capture of one of the interacting molecules.

Refer to Biacore handbooks and [cytiva.com/biacore](http://cytiva.com/biacore) for details on experimental protocols and methodology.

# Regeneration

Regeneration of the immobilized ligand may be performed by selective dissociation of the bound analyte. Conditions should be chosen to achieve complete dissociation of the analyte without affecting the binding characteristics of the ligand. The surface of Sensor Chip CM4 is resistant to a wide range of agents for this purpose. These are listed in the following table (see the Chemical resistance table below). The choice of regeneration procedure may be limited by the stability of the ligand.

Refer to Biacore Sensor Surface Handbook for more detailed information on regeneration strategies.

# Chemical resistance

The surface of Sensor Chip CM4 is resistant to 1-minute pulses of many commonly used agents. See table below for information of common agents compatible with Sensor Chip CM4.

Agent	Concentration
Acetonitrile	30%
DMSO	10%
DTE	0.1 M
EDTA	0.35 M
Ethanol	70%
Ethanolamine	1 M
Ethylene glycol	100%
Formamide	40%
Formic acid	20%
Glycine pH 1.5 to 3.0	100 mM

Agent	Concentration
HCl	100 mM
Imidazole	300 mM
MgCl <sub>2</sub>	4 M
NaOH	100 mM
NaCl	5 M
SDS	0.5%
Surfactant P20	5%
Urea	8 M

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