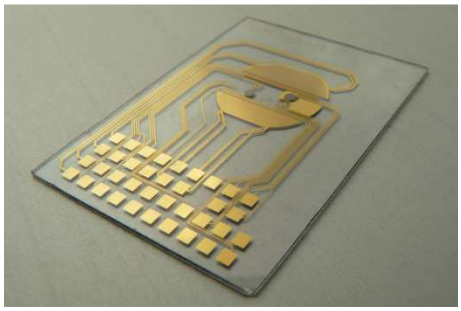

# BioChip-H (Order No. 08504)

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## Content



## General

Please check delivery for transport damage when unpacking.

## Description

Multiparametric BioChip for measurement (Impedance, $pO_2$, pH, MEA, stimulation electrode and temperature) of cellular vitality and changes in bioimpedance on glass substrate for optical access via microscope.

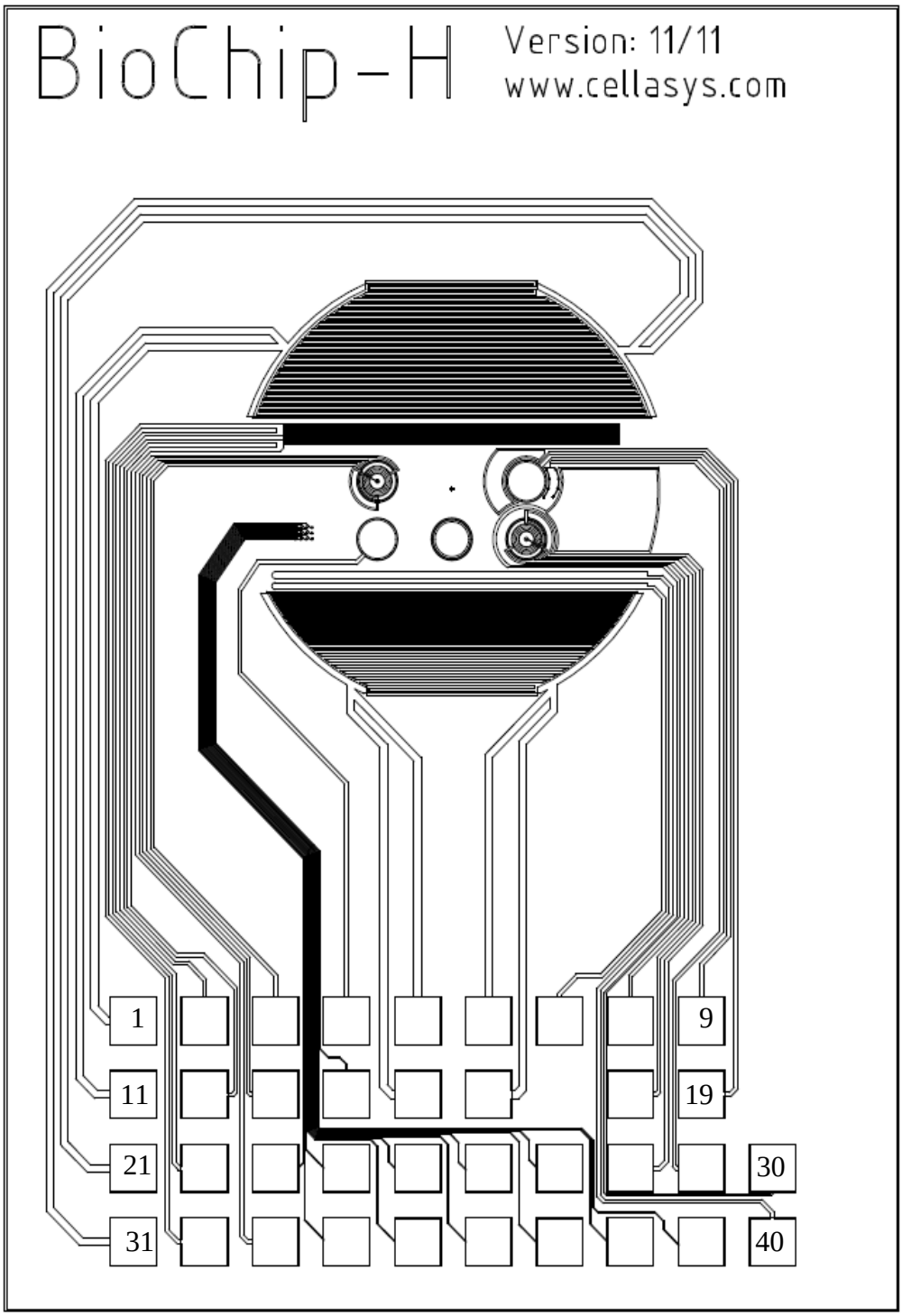
Caution

Handle with care!

- Glass tends to break due to mechanical stress.
- Beware of cutting damage.

| | |
|---|---|
|  | In general **BioChip-H** may only be used in combination with cellasys IMOLA-IVD by **qualified personnel** of a research or healthcare institution. Read the **IMOLA-IVD manual** thoroughly and carefully follow the instructions and guidelines provided. |

## Drawing



## Pin configuration

| Pin No. | Name | Description |
|---|---|---|
| 1 | IDES1AU | Bioimpedance sensor 1, voltage connector A |
| 2 | TEMPAU | Temperature sensor, voltage connector A |
| 3 | O21REF | Dissolved oxygen sensor 1, reference electrode |
| 4 | PH1 | pH sensor 1 |
| 5 | IDES2AI | Bioimpedance sensor 1, current connector A |
| 6 | IDES2BI | Bioimpedance sensor 2, current connector B |
| 7 | BEAM2 | Beam electrode 2 |
| 8 | O22AUX | Dissolved oxygen sensor 2, auxiliary electrode |
| 9 | PH2 | pH sensor 2 |
| 10 | - | Not connected |
| 11 | IDES1AI | Bioimpedance sensor 1, current connector A |
| 12 | TEMPAI | Temperature sensor, current connector A |
| 13 | O21WK | Dissolved oxygen sensor 1, work electrode |
| 14 | ME9 | Micro electrode 9 |
| 15 | IDES2AU | Bioimpedance sensor 2, voltage connector A |
| 16 | IDES2BU | Bioimpedance sensor 2, voltage connector B |
| 17 | - | Not connected |
| 18 | O22WK | Dissolved oxygen sensor 2, work electrode |
| 19 | SPARE1 | Spare electrode 1 |
| 20 | - | Not connected |
| 21 | IDES1BI | Bioimpedance sensor 1, current connector B |
| 22 | TEMPBI | Temperature sensor, current connector B |
| 23 | ME4 | Micro electrode 4 |
| 24 | ME2 | Micro electrode 2 |
| 25 | ME8 | Micro electrode 8 |
| 26 | ME6 | Micro electrode 6 |
| 27 | ME12 | Micro electrode 12 |
| 28 | O22REF | Dissolved oxygen sensor 2, reference electrode |
| 29 | SPARE2 | Spare electrode 2 |
| 30 | SPARE3 | Spare electrode 3 |
| 31 | IDES1BU | Bioimpedance sensor 1, voltage connector B |
| 32 | TEMPBU | Temperature sensor, voltage connector B |
| 33 | O21AUX | Dissolved oxygen sensor 1, auxiliary electrode |
| 34 | ME3 | Micro electrode 3 |
| 35 | ME1 | Micro electrode 1 |
| 36 | ME7 | Micro electrode 7 |
| 37 | ME5 | Micro electrode 5 |
| 38 | ME11 | Micro electrode 11 |
| 39 | ME10 | Micro electrode 10 |
| 40 | BEAM1 | Beam electrode 1 |

# Technical data

| | |
|---|---|
| Dimensions: | 33,8 x 24,0 x 0,4 mm³ |
| Weight: | 1,0 g |
| Optical properties | glass |
| | |
| Operating temperature: | 0 °C to +80 °C |

## *pH (PH)*

2 electrodes

| | |
|---|---|
| Dimensions (Spot): | ~ 3 mm² |
| Linear range: | pH 5,0 to pH 11,0 |
| Sensitivity: | - 40 mV/pH |
| Response time ($t_{90}$): | < 5 s |

## *Dissolved oxygen (O2)*

2 electrodes

| | |
|---|---|
| Dimensions: | ~ 3 mm² |
| Linear range: | 0 to 120 %DO |
| Sensitivity: | 1 nA/pDO +/- 10 % |
| Response time ($t_{90}$): | < 0,1 s |

## *Impedance (IDES)*

2 electrodes

| | | |
|---|---|---|
| Dimensions: | ~ 40 mm² | |
| Linear range: | 10 Ω to 5 k Ω | |
| Geometry: | IDES1: | 50 µm width, 50 µm distance |
| | IDES2: | 50 µm width, 25 µm distance |
| Response time ($t_{90}$): | < 1 s | |

## *Temperature (TEMP)*

1 electrode (covered with insulation layer)

| | |
|---|---|
| Dimensions: | ~ 3 mm² |
| Linear range: | 0 °C to +80 °C |
| Sensitivity: | tdb |
| Response time ($t_{90}$): | < 1 s |

### *Micro electrode array (MEA)*

3x4 electrodes

| | |
|---|---|
| Distance between electrodes: | 150 µm |
| Diameter of electrode: | 28 µm |

### *Beam electrodes (BEAM)*

2 electrodes (covered with insulation layer)

| | |
|---|---|
| Dimensions: | 10 x 0,18 mm² |
| Distance between electrodes: | 0,1 mm |

### *Spare Electrodes (SPARE)*

3 electrodes

## Intended use

The BioChip-H is designed to be used in combination with IMOLA-IVD, for multiparametric measurement of cellular vitality and bioimpedance.

The BioChip-H is a single-use device; it must not be used for multiple applications!

## Intended misuse

The BioChip-H must not be operated with reagents and reagent products listed in directive 98/79 EEC, Annex II List A and List B.

## Liability / Copyright

All technical details are state of the technology from December 2014 and are subject to change without notice. No liability is assumed for pictures, descriptions or any content of this document.