



# Automation solutions for the processing of dried blood spot (DBS) samples



- Full traceability, from the barcoded blood collection card to the test result
- Validated combination of test systems and automation solutions from EUROIMMUN and Revvity for DBS as sample material
- Flexible and scalable solutions for every laboratory size and different throughputs

# Automation solutions for laboratories with high sample throughput

## EUROLabWorkstation ELISA (ELW ELISA)

- Fully automated high-throughput ELISA processing from the primary sample to the final result
- Direct loading of samples into the system using 96-well plates
- Highest capacity of up to 15 microplates
- 100% traceability during the entire process due to bar- and QR coding



DBS Holder: strip with 8 protrusions with large openings for fluid to pass through, to be placed into a 1 ml-deep-well plate

### DBS Holder

The DBS Holder supports the automated processing of DBS samples with the ELW ELISA. It is used to hold down the punched-out membrane pieces in the extract at the bottom of the wells while the extract is transferred from the plate to the reaction tubes.

### DBS workflow

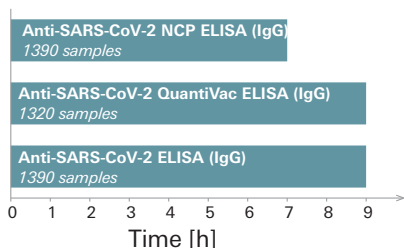
1 Puncher	2 Extraction	3 DBS Holder	4 ELW ELISA
<ul style="list-style-type: none"> <li>■ Automatic punching of DBS</li> <li>■ Available punchers from:                             <ul style="list-style-type: none"> <li>- DBS Puncher®</li> <li>- Panthera Puncher™ 9</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Manual addition of 500 µl buffer per two punched-out membrane pieces</li> <li>■ Incubation in conventional incubator at +37 °C for one hour</li> </ul>	<ul style="list-style-type: none"> <li>■ Holding the punched-out DBS to the bottom of the wells</li> </ul>	<ul style="list-style-type: none"> <li>■ Direct loading of the 96-well plate containing DBS Holders and DBS extracts</li> <li>■ Parallel processing of up to 15 plates</li> <li>■ High-speed analysis of samples</li> </ul>

### Example of the DBS workflow using the ELW ELISA

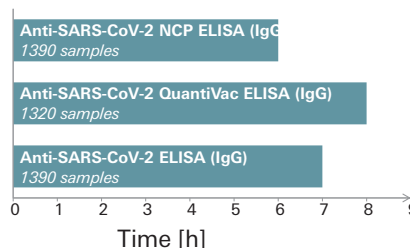


### For comparison: further examples of DBS workflows

#### With four incubators\*



#### With eight incubators\*



\*Incubators are not part of the standard scope of delivery  
 Note: One diagram bar corresponds to one system run.

# Automation solutions for laboratories with low to medium sample throughput

We offer different options of ELISA automation suitable for your throughput

## EUROIMMUN Analyzer I

- Up to 180 samples
- Up to seven ELISA plates in parallel
- Four heatable incubators



## EUROIMMUN Analyzer I-2P

- Up to 144 samples
- Up to three ELISA plates in parallel
- Two heatable incubators



## Sprinter XL

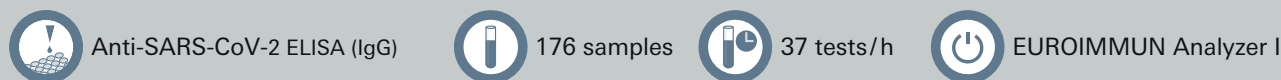
- Up to 160/ 240 samples
- Up to six ELISA plates in parallel
- Four heatable incubators



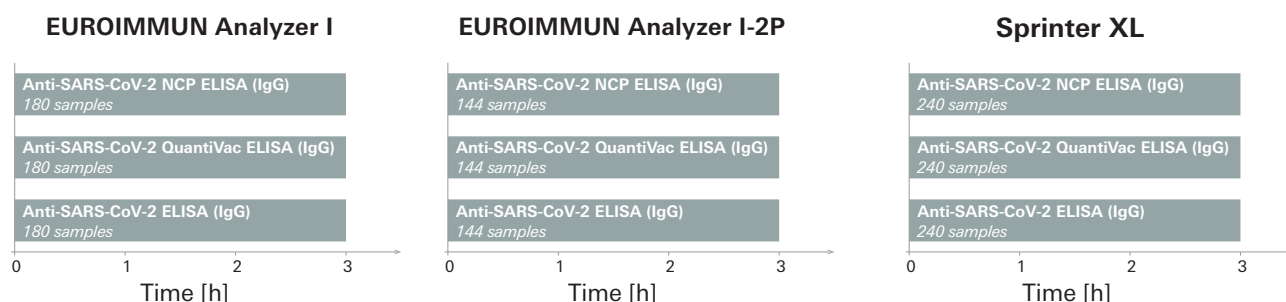
## DBS workflow

1 Puncher	2 Extraction	3 EURO-MappingTool	4 Liquid handling	5 Automated ELISA systems
<ul style="list-style-type: none"> <li>■ Automatic punching of DBS</li> <li>■ Available punchers:                             <ul style="list-style-type: none"> <li>- DBS Puncher®</li> <li>- Panthera Puncher™ 9</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Manual addition of 250 µl buffer per punched-out membrane piece (also possible with two membrane pieces using 500 µl buffer)</li> <li>■ Incubation in conventional incubator at +37°C for one hour</li> </ul>	<ul style="list-style-type: none"> <li>■ Software to support the complete traceability of all samples during the DBS workflow</li> <li>■ Conversion of the puncher-generated plate layout into individual sample barcodes for printing</li> </ul>	<ul style="list-style-type: none"> <li>■ Manual sample transfer from the extraction plate to the barcoded sample tubes</li> </ul>	<ul style="list-style-type: none"> <li>■ Loading of barcoded sample tubes into the system as a standard</li> <li>■ Simple extension of routine operations by processing of DBS samples</li> </ul>

## Example of the DBS workflow using the EUROIMMUN Analyzer I



## For comparison: further examples of DBS workflows



Note: One diagram bar corresponds to one system run.



## Instruments for automated punching of DBS

The DBS Puncher and Panthera Puncher 9 support the tracking of samples due to the automated identification of bar-codes.

### DBS Puncher

- Up to two 96-well plates in parallel
- Width x depth x height: 42 cm x 48 cm x 30.5 cm



### Panthera Puncher 9

- Up to 9 96-well plates in parallel
- Width x depth x height: 87.6 cm x 74 cm x 56 cm
- Automatic adjustment of the punching pattern to the size and form of the dried blood spot



### Order information

Instrument	Function	Order number
Panthera Puncher 9	Automated punching of DBS in up to nine 96-well plates	2081-0010*
DBS Puncher	Automated punching of DBS in up to two 96-well plates	1296-071*
DBS Holder	Holding punched-out DBS filter paper in place at the bottom of the deep-well plate (1 ml)	ZG 9701-01100-001
Deep well plate (1 ml)	For use with the DBS Holder	ZG 9956-0132
EUROMappingTool	Conversion of plate barcodes into barcodes for sample tubes	YG 9730-0101
EUROLabWorkstation ELISA	Automated high-throughput processing of ELISA samples	YG 0851-0101
EUROIMMUN Analyzer I/I-2P	Automated processing of ELISA samples	YG 0014-0101
Sprinter XL 160/240 ELISA		YG 0015-0101
		YG 0033-0101-3
		YG 0033-0101-23

\* Revvity product, available to order from your local Revvity contact

### Further required materials

- For ELW ELISA: EUROIMMUN Combi Rack Type Q (order no. ZG 0855-0101-1), EUROIMMUN Rack Label Set for Combi Rack Type Q (order no. ZG 0859-0101-30), at least software version 2.3
- For EUROMappingTool: Label Printer Zebra ZD410 (order no. YG 0280-0101-1) and corresponding labels (e.g. ZG 0279-0101-X) for printing of barcodes, and barcode scanner

For further information  
visit our website at  
[www.euroimmun.de](http://www.euroimmun.de)

