



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.

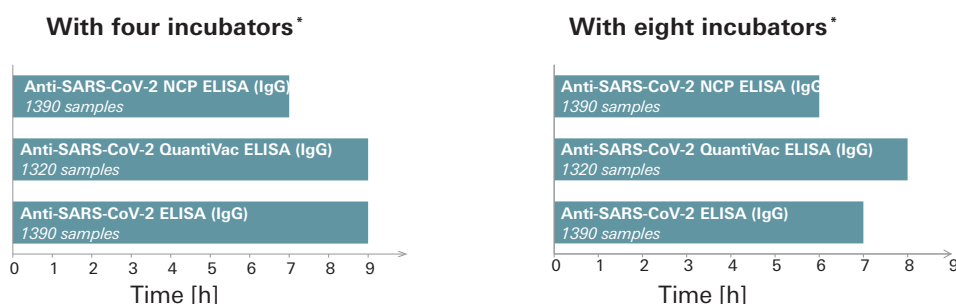
DBS workflow

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

Example of the DBS workflow using the ELW ELISA



For comparison: further examples of DBS workflows



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

Example of the DBS workflow using the EUROIMMUN Analyzer I



Anti-SARS-CoV-2 ELISA (IgG)



176 samples



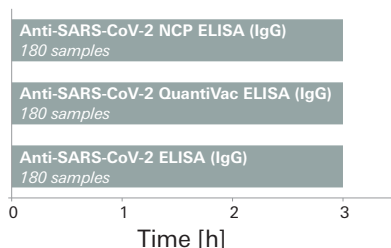
37 tests/h



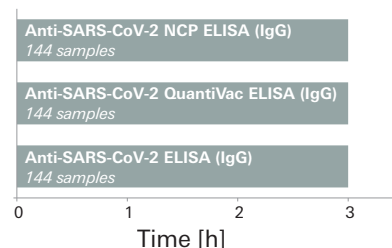
EUROIMMUN Analyzer I

For comparison: further examples of DBS workflows

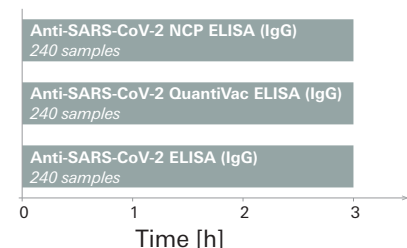
EUROIMMUN Analyzer I



EUROIMMUN Analyzer I-2P



Sprinter XL



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 barcodes.

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

Category	Test system/Instrument	Function	Order number
DBS	Blood collection card (100 pieces)	Cards for blood uptake	ZV 9711-01100*
Automatization	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 YG 0015-0101
Sprinter XL 160/240 ELISA	YG 0033-0101-3 YG 0033-0101-23		

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

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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/en/automation/dbs/

