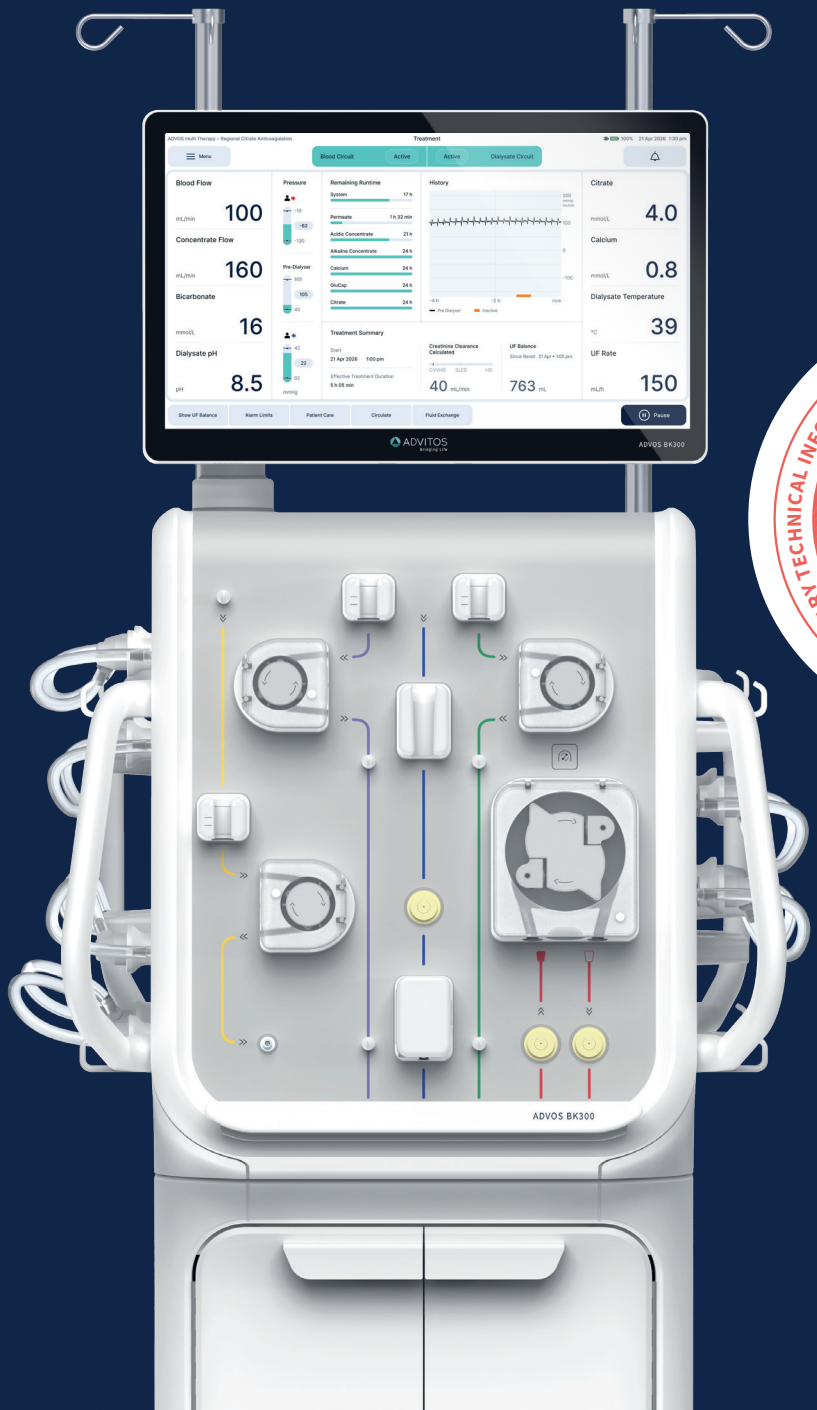
ADVITOS
Bridging Life

Opening a new chapter in advanced blood purification



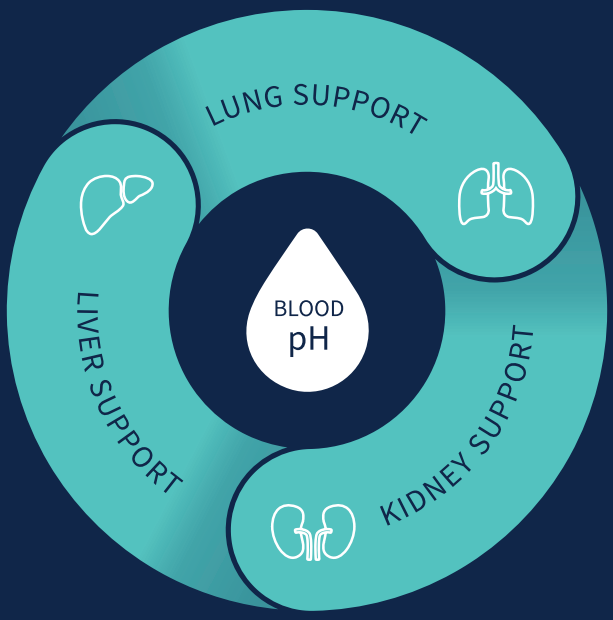
PRELIMINARY TECHNICAL INFORMATION

The product is not authorised for sale or clinical use.

CE marking in accordance with MDR 2017/745 for the ADVOS BK300 system and treatment units is pending.

ADVOS multi therapy

Individually tailored therapy for patients with an indication for multi-organ support



Liver
Removal of protein-bound toxins

Lungs
Fluid-based CO_2 removal in a low-invasive setting

Kidney
Removal of water-soluble and protein-bound nephrotoxins

Blood pH
Correction of metabolic and respiratory acidosis

In patients with multiple organ failure, the mortality rate rises in line with the number of failing organs. Despite significant advances in intensive care medicine, the mortality rate remains alarmingly high.
These critically ill patients require extensive extracorporeal organ support. The management of such therapies in the ICU is highly complex and results in a significant operational workload.



ADVOS multi therapy for individualised multi-organ support

The ADVOS therapy system is a single extra-corporeal system that can individually support the detoxification functions of the kidneys, liver and lungs, while effectively correcting acid-base disorders. The ADVOS multi therapy uses a dialysate enriched with human albumin, which is permanently processed in a recirculation circuit.

The preparation of the dialysate ensures a consistently high detoxification performance of protein-bound and water-soluble substances. Individualised blood detoxification is made possible by the unique option to adjust the pH value and control the bicarbonate levels of the dialysate during the therapy.


1
Citrat
NaCl
4b
4a
2
3
Zurück
ADVITOS
Bridging Life

Clinical data suggest a link between the ADVOS multi therapy and improved survival rates[1-6]

The ADVOS multi therapy is based on a proven, minimally invasive treatment approach. It is compatible with standard dialysis catheters and requires only low blood flow rates and volumes. At the same time, users benefit from intuitive operation and efficient workflows in everyday clinical practice.

Clinical outcome

- Correction of acid-base imbalances by direct removal of acids
- Treatment of severe metabolic and respiratory acidosis (fluid-based CO_2 removal)
- Blood pH is physiologically balanced as in the kidneys
- High and long-lasting efficacy in supporting the main detoxification organs

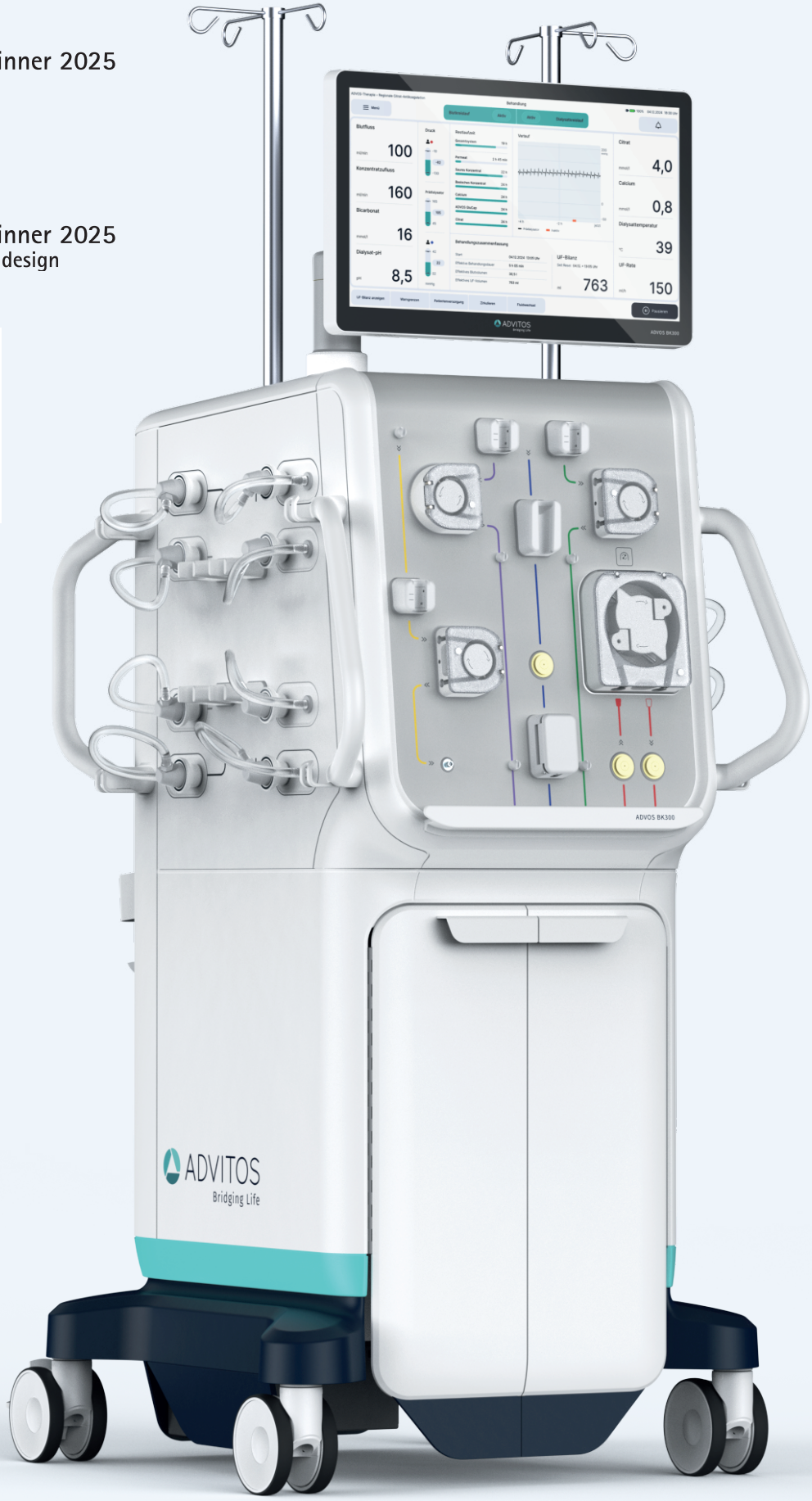
User benefits

- One of the world's leading 4-in-1 therapy systems to provide multi-organ support for liver, lung, kidney and acid-base balance
- A user-friendly interface and intuitive operation can reduce the risk of errors
- Ergonomic and efficient processes in the intensive care unit thanks to the integrated 80-litre permeate container
- Allows the use of Regional Citrate Anticoagulation throughout dialysis

reddot winner 2025

reddot winner 2025
innovative design

GOLD
AWARD
2026



The next generation ADVOS BK300

A new era in extracorporeal blood purification

The next generation ADVOS BK300 is an innovative platform that enables a comprehensive range of fully integrated extracorporeal blood purification therapies with treatment durations of up to 72 hours (RRT - Renal Replacement Therapy).

The therapy can be flexibly adjusted: Depending on the parameter settings and the disposable set used, it can be targeted at one or more lead organs or adapted to one or more therapy goals.

The user can choose between two therapy modes:

1. **ADVOS multi therapy**
   for the removal of protein-bound and/or water-soluble substances and/or acidosis correction, e.g. in patients with liver failure, kidney failure, acidosis, multi-organ failure, intoxication or severe shock.

2. **ADVOS RRT** *
   for standard renal replacement therapies.

Find out more about the ADVOS BK300 here

The innovative ADVOS BK300 offers:

- A holistic therapeutic approach in extracorporeal blood purification
- Individually adjustable settings for targeted removal of water-soluble and protein-bound substances
- Flexible anticoagulation options: Regional Citrate Anticoagulation (RCA) available in all therapy modes
- Innovative acidosis therapy for targeted correction of acid-base disorders
- Innovative recirculation circuit: effective blood detoxification during the entire treatment period by continuously regenerating the recirculating dialysate
- Low invasive procedure: blood access using a conventional dialysis catheter and low blood flow rates

*in development

Innovative fluid-based acidosis correction

The ADVOS multi therapy enables physiological and fluid-based removal of H^+ ions and CO_2 as well as correction of bicarbonate levels for the treatment of metabolic and respiratory acidosis.

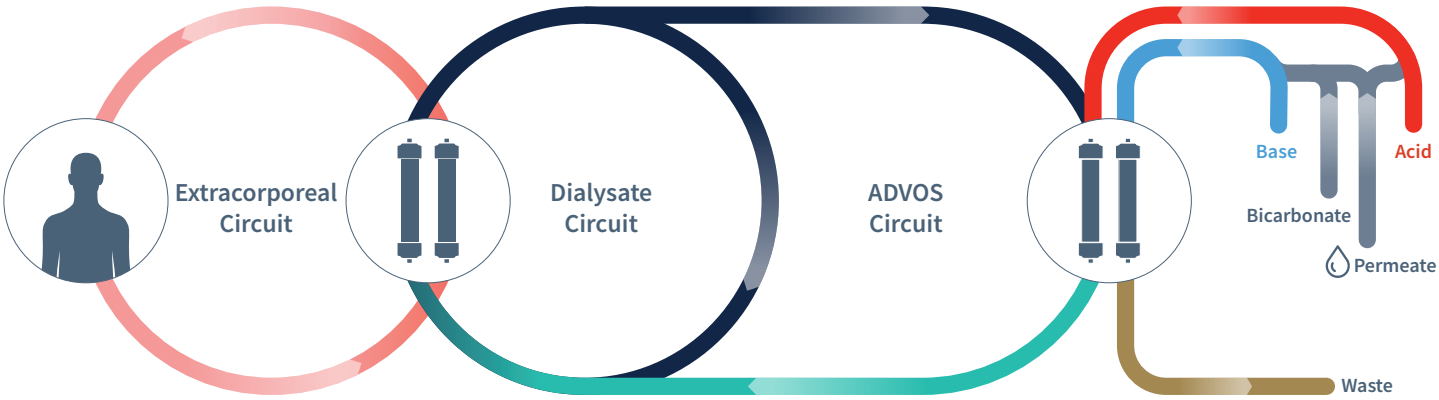
Acidosis therapy is effectively tailored to each patient's needs by precisely adjusting the pH value and bicarbonate content of the dialysate.

ADVOS BK300 enables a scalable acidosis correction through:

- pH management using dedicated ADVOS concentrates (acid and base)
- Variably adjustable bicarbonate levels of the dialysate during the therapy



Core principle of the ADVOS multi therapy



The ADVOS multi therapy is based on the principle of albumin dialysis with the advantages of high dialysate flow, low albumin consumption and enhanced toxin removal. The core processes involve the regeneration of toxin-loaded albumin dialysate through controlled pH and temperature changes within the unique purification circuit (ADVOS Circuit), followed by its subsequent reuse.

Base circuit
Increasing the pH eliminates negatively charged toxins (e.g. bilirubin and bile acids) from the albumin dialysate

Acid circuit
Reducing the pH eliminates positively charged toxins (e.g. copper and CO_2) from the albumin dialysate

- High detoxification capacity due to simultaneous removal of toxins in both subcircuits (base and acid circuit)
- H^+ and CO_2 removal for the treatment of metabolic and respiratory acidosis through individualised pH adjustment of the albumin dialysate
- Protein-bound uraemic toxin removal (e.g. indoxyl sulphate)
- Cytokine removal (e.g. interleukin-6)[7]
- Reduction of ammonia levels
- Innovative recirculation of the dialysate allows a steady state detoxification in contrast to a complete removal of substances through adsorption or single-pass dialysis
- Effective myoglobin removal at low blood flow rates demonstrated in vitro[8]

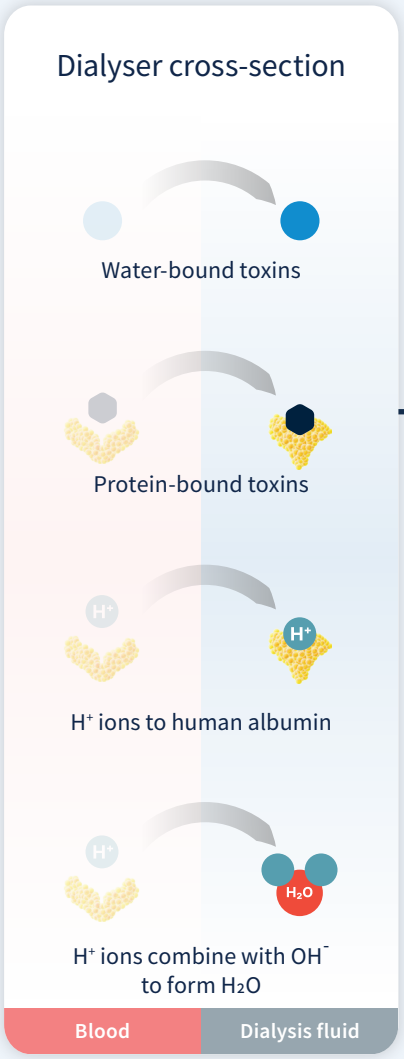
Acidosis correction via human albumin

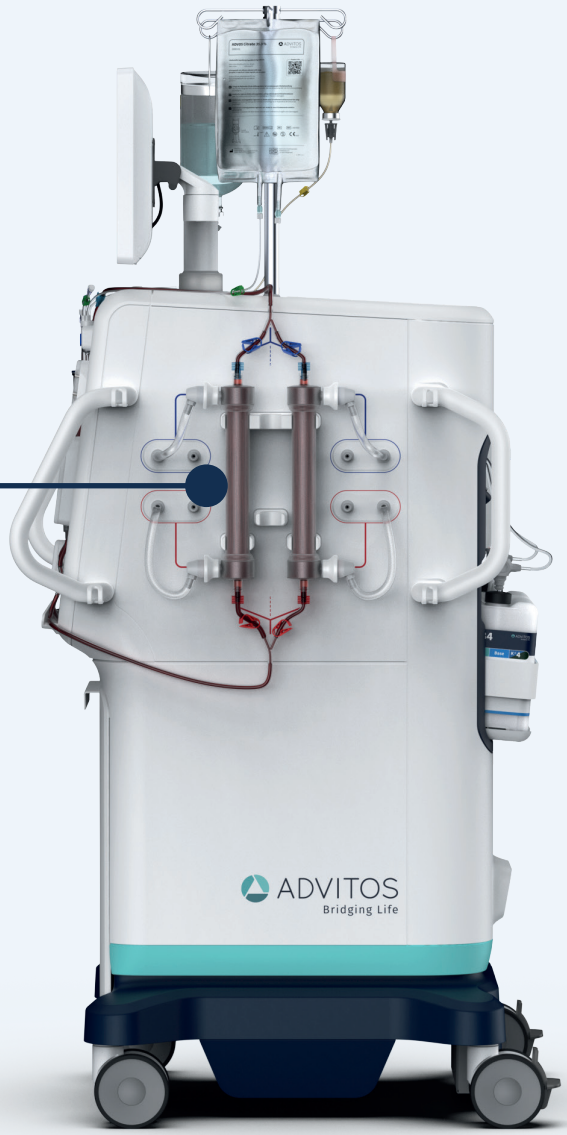
Diffusion gradient blood → dialysate

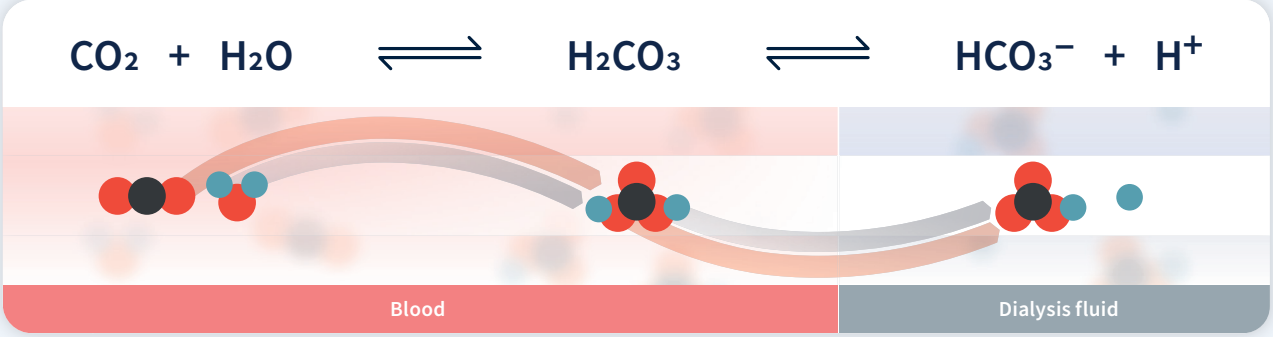
- Direct diffusion of H^+ ions:
  blood pH <7.35 → dialysate pH up to 9.5
- H^+ binding to human albumin and phosphate
- Direct diffusion of HCO_3^-:
  erythrocytes excrete CO_2

Dialysate

- Setting dialysate HCO_3^- (bicarbonate)
  - during metabolic acidosis - increasing HCO_3^- ↑
  - during respiratory acidosis - lowering HCO_3^- ↓

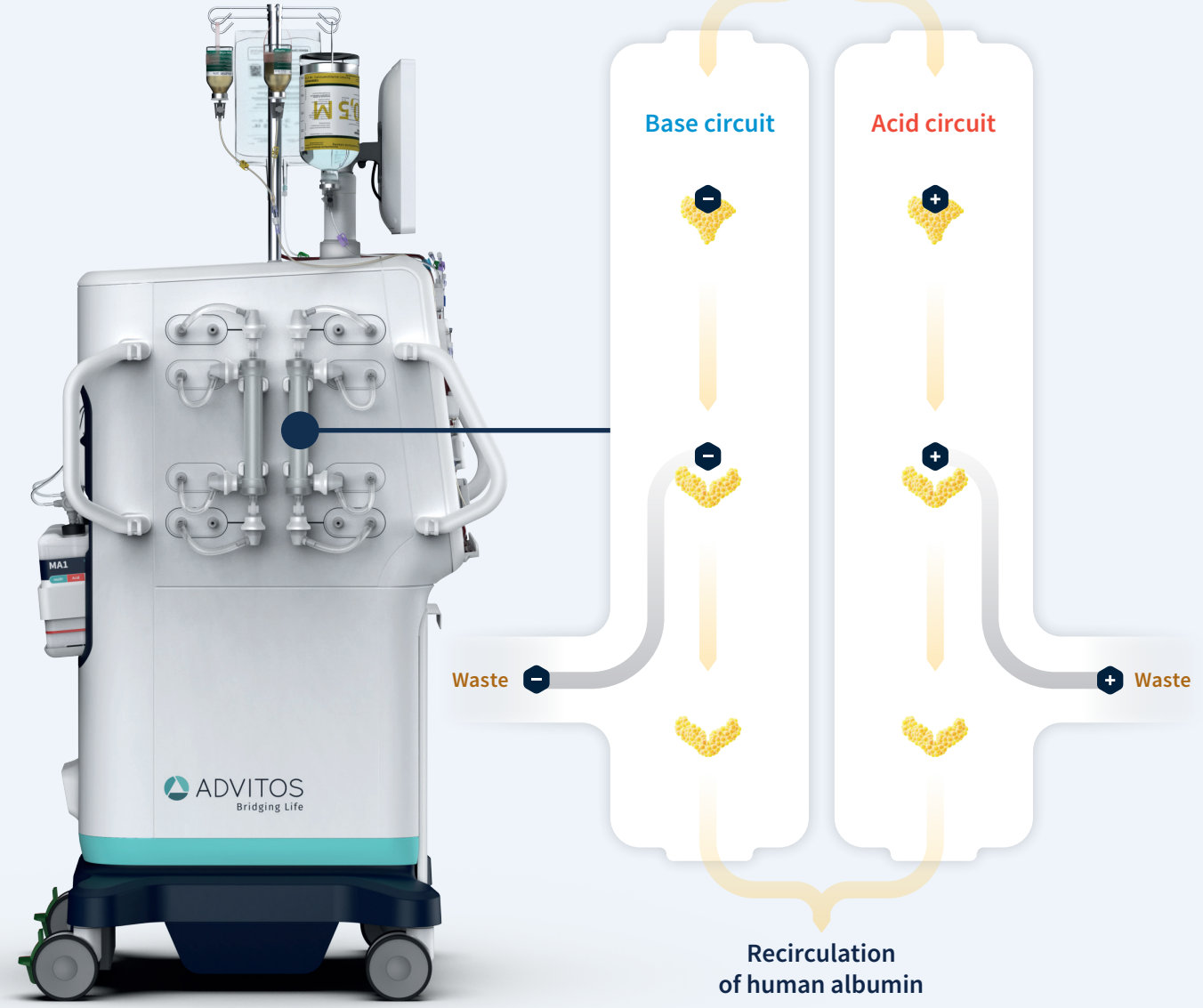






ADVOS Circuit - filter operation

The pH value is stabilised through a buffering system based on H^+ and OH^- ions. The OH^- ions, originating from the added base (NaOH), are used to neutralise free protons (H^+), thereby reducing fluctuations in pH levels.



Acid circuit (H^+Cl^-)

- Removal of cationic protein-bound substances, e.g. copper
- Removal of water-soluble substances
- Removal of CO_2 through the removal of HCO_3^-

Base circuit (Na^+OH^-)

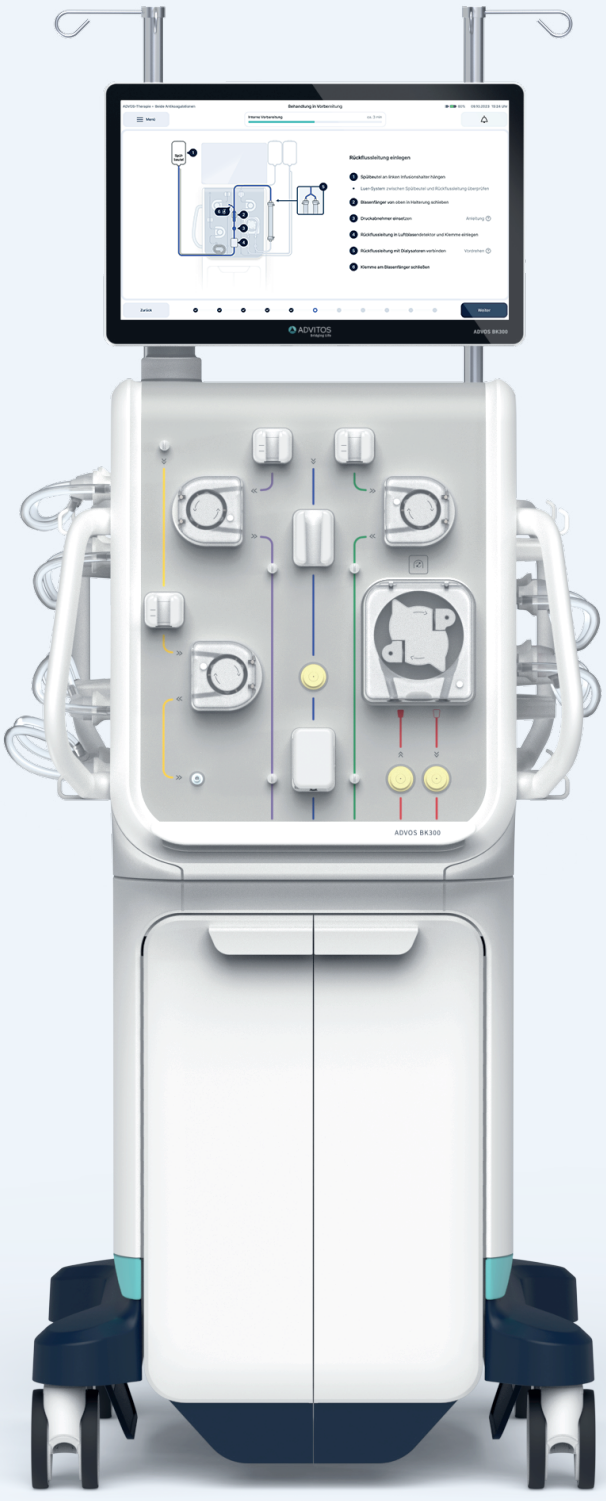
- Removal of anionic protein-bound substances, e.g. bilirubin
- Removal of water-soluble substances
- Removal or addition of HCO_3^-
- H^+ removal

Enhanced usability

Device interactions minimised to maximise workflow efficiency in the ICU

Clearly structured user interface
Traffic-light system for quick status checks

Structured workflows
Flawless arrangement of tubing lines using a colour-coded system



Quick set-up and intuitive operation
Seamless device operation with the help of integrated graphic instructions

Ergonomic handling
Streamlined fluid container and device management

High-quality
24-hour treatment kits





Available with
K2 and K4

Available with
and without calcium

24 h

Integrated Regional Citrate Anticoagulation lasting **up to 24-hours**

High-quality OEM products
Dedicated ADVOS blood circuit set of tubing, filters and connectors

Patented and self-produced
ADVOS concentrates (acid and base)

Individually adjustable settings for targeted 24-hour therapy

Blood Flow
100-600 mL/min

Concentrate Flow (9.6-19.2 L/h)
160-320 mL/min

Patient Individualised Bicarbonate 6-30 mmol/L

Patient Individualised Dialysate pH 7.4-9.5





Regional Citrate Anticoagulation
with dedicated ADVOS Citrate 35.3%

Ultrafiltration Rate
0-1000 mL/h

Optimised permeate and filtrate management





1 Fill

80-litre filling volume of osmosis water

Efficient water supply: The fluid container is filled in under 3 minutes using the ADVOS Aqua reverse osmosis system, ensuring top water quality.

2 Load

Even possible during treatments

Compact design: Integrated 80-litre container saves storage space and eliminates the need to change fluid bags during treatments.





3 Treat

Treatment duration up to 24 h

Maximum flexibility: Suitable for use in all hospital units.

4 Drain

The filtrate is drained in only 3 min

The ADVOS Aqua

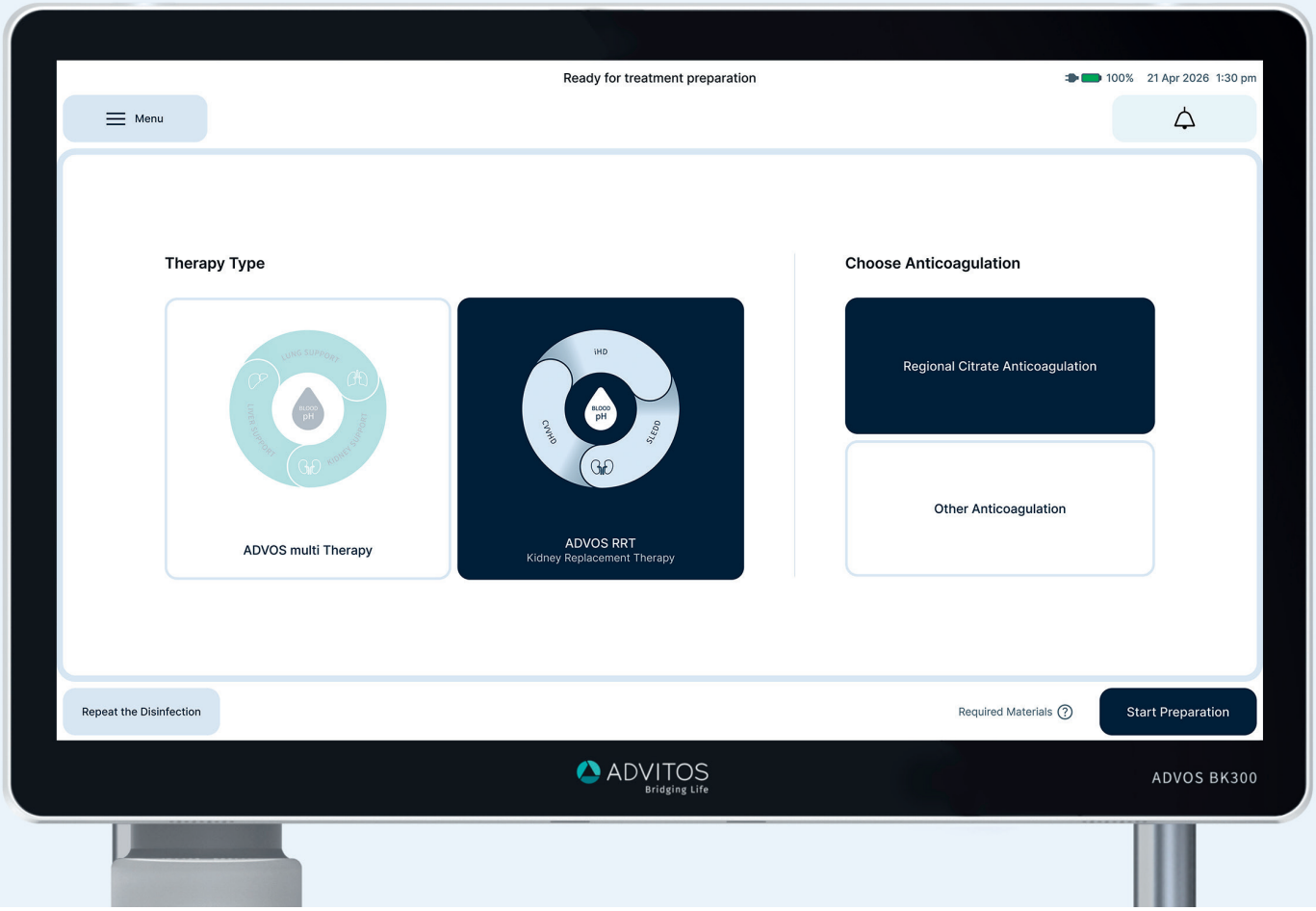
Dedicated water supply for ADVOS multi therapy



The ADVOS Aqua works on the proven principle of reverse osmosis and has been specifically designed for use with the ADVOS therapy system.
It provides a reliable and high-quality solution for water supply, thereby supporting the efficiency and excellent compatibility of the ADVOS therapy system.

Advantages at a glance:

- **Efficient water supply:**
  The ADVOS Aqua reliably supplies the ADVOS therapy system with high-purity permeate and meets the microbiological quality standards for dialysis as well as all technical safety requirements in accordance with DIN EN ISO 23500-3:2024.
- **Easy to use:**
  The intuitive user interface reduces staff involvement – a clear advantage.
- **Fast filling – less waiting time:**
  The combination of a reverse osmosis system and an integrated filling unit enables the ADVOS containers to be filled in under 3 minutes – while maintaining the highest hygiene standards.
- **Modern, technical design:**
  Function meets aesthetics: The ADVOS Aqua impresses with its contemporary appearance and design compatible with the hospital environment.



ADVOS RRT*: renal replacement therapy in the ICU redefined

Individual clearance depending on each patient's needs and course of treatment

The ADVOS BK300 provides a comprehensive solution in the treatment of acute kidney injury (AKI). From intermittent dialysis (iHD, SLED) to continuous renal replacement therapy (CRRT), it covers the entire spectrum of dialysis procedures in a single device and setup. Thanks to the adjustable settings for blood, dialysate and concentrate flow rates as well as individualised bicarbonate adjustments, the ADVOS BK300 offers optimal flexibility for every patient.

ADVOS RRT advantages:

- Regional Citrate Anticoagulation (RCA) possible throughout the entire dialysis spectrum
- Metabolic alkalosis can be prevented by flexible bicarbonate adjustment
- Treatment duration up to 72 hours possible
- Treatment possible for up to 24 hours without fluid exchange – made possible by optimised configuration of all dialysis fluids
- Sustainable water supply with optimised fluid management based on 80-litre container concept

*in development

ADVOS BK300 can be used for a wide range of indications in intensive care medicine

Further applications are already in development and many more are in the pipeline.

Intoxication

Cardiogenic Shock

Multi-Organ Failure

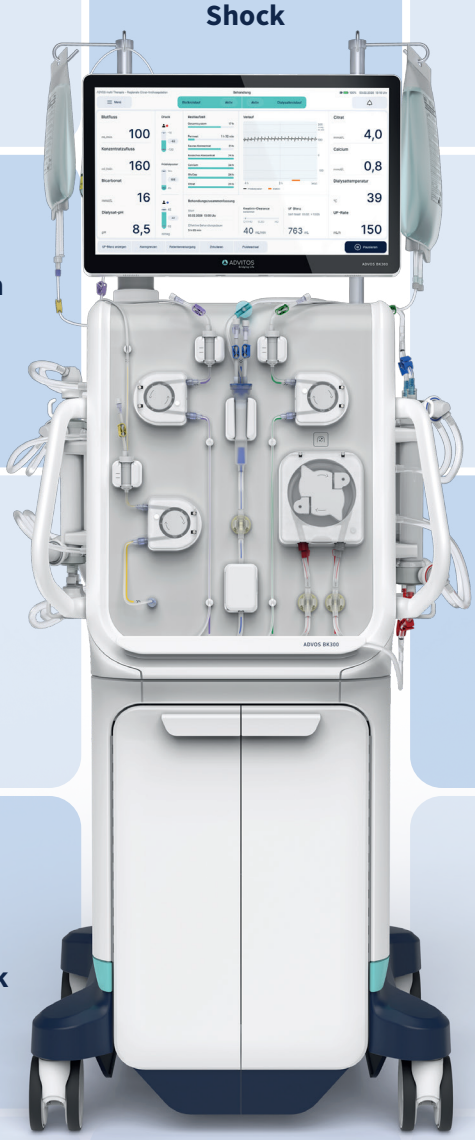
Acidosis

Acute Respiratory Distress Syndrome (ARDS)

Oxygenation*

Sepsis & Septic Shock

COPD*



ADVOS multi therapy

Clinical trials suggest a significant improvement in survival rates*

Patient registry[5]

Large, heterogeneous, severely ill ICU population across 5 hospitals.



Survival (baseline) | Survival (ADVOS)

Cardiac surgery[6]

Patients with postoperative cardiogenic shock and multiple organ failure.



Survival (baseline) | Survival (ADVOS)

*Based on SOFA score-standardised mortality ratio and observed survival rates in the referenced studies.

Dose-dependent reduction confirmed in clinical studies during ADVOS multi therapy[9]

Driving pressure mbar · Effect of ADVOS treatments across baseline severity levels

Before treatment	Relative variation for each ADVOS treatment		Treatments with reduction	Number of ADVOS treatments
< 15	0.0%	(-1.40; 8.33)	27.6%	29
15-20	-6.3%	(-17.10; 0.00)	57.1%	35
≥ 20	-17.7%	(-31.80; -6.80)	75.0%	8

Norepinephrine µg/kg/min · Effect of ADVOS treatments across baseline severity levels

Before treatment	Relative variation for each ADVOS treatment		Reduction during treatment	No requirement post-ADVOS
≥ 0.001-0.100	-95%	(-100.0; -41.0)	100%	43%
≥ 0.100-0.500	-25%	(-48.0; 0.0)	68%	3%
≥ 0.500	-20%	(-53.0; 0.0)	73%	6%

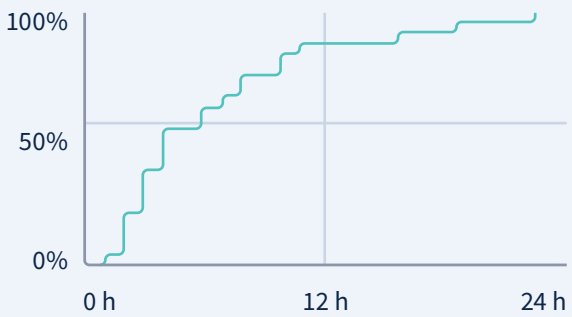
Bilirubin mg/dL · Effect of ADVOS treatments across baseline severity levels

Before treatment	Relative elimination for each ADVOS treatment		Treatments with level reduction
< 6	0.0%	(-20.0; -28.8)	38%
6-12	-10.8%	(-19.7; -4.7)	86%
≥ 12	-23.0%	(-30.5; -17.4)	97%

Clinically validated acidosis correction[10]

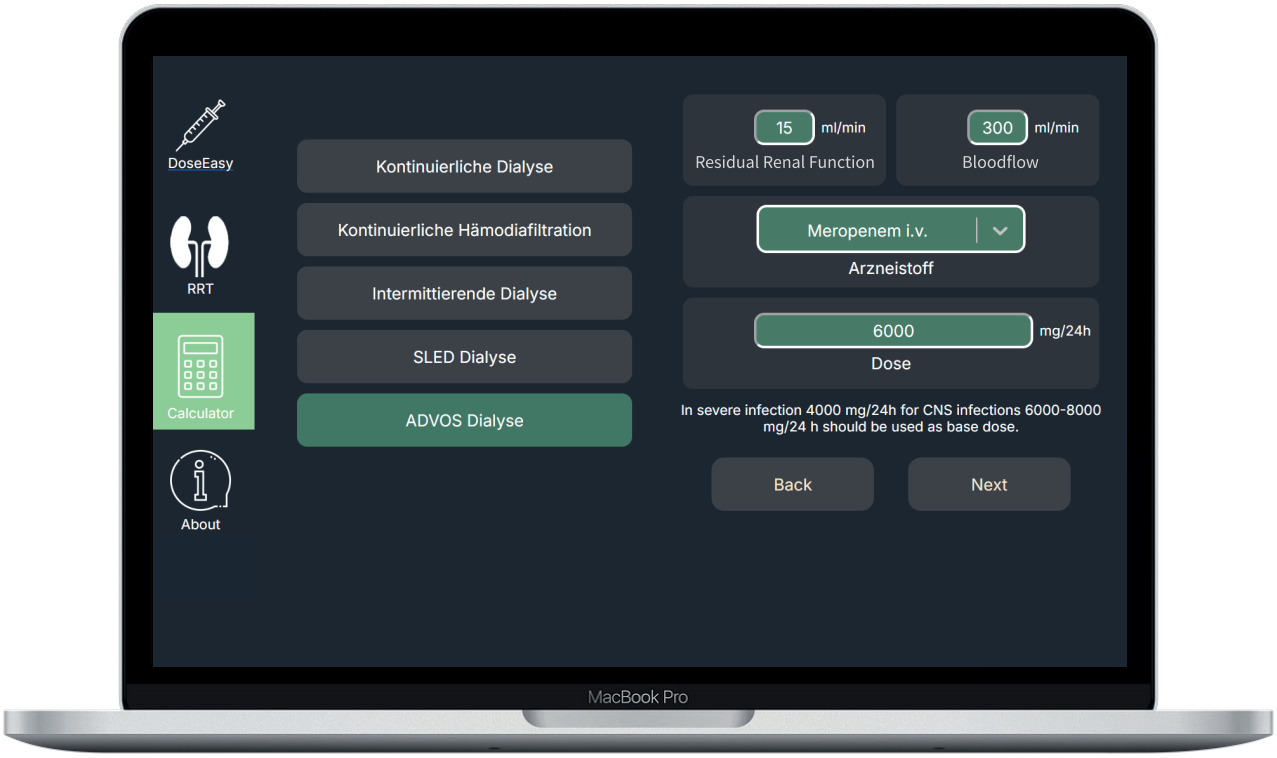
ADVOS multi restores hypercapnic acidosis to blood pH ≥ 7.35 in patients within a median of 4.3 h.

Cumulative % of patients reaching a blood pH > 7.35 for the first time during the first 24 h of ADVOS treatment



Safe blood purification

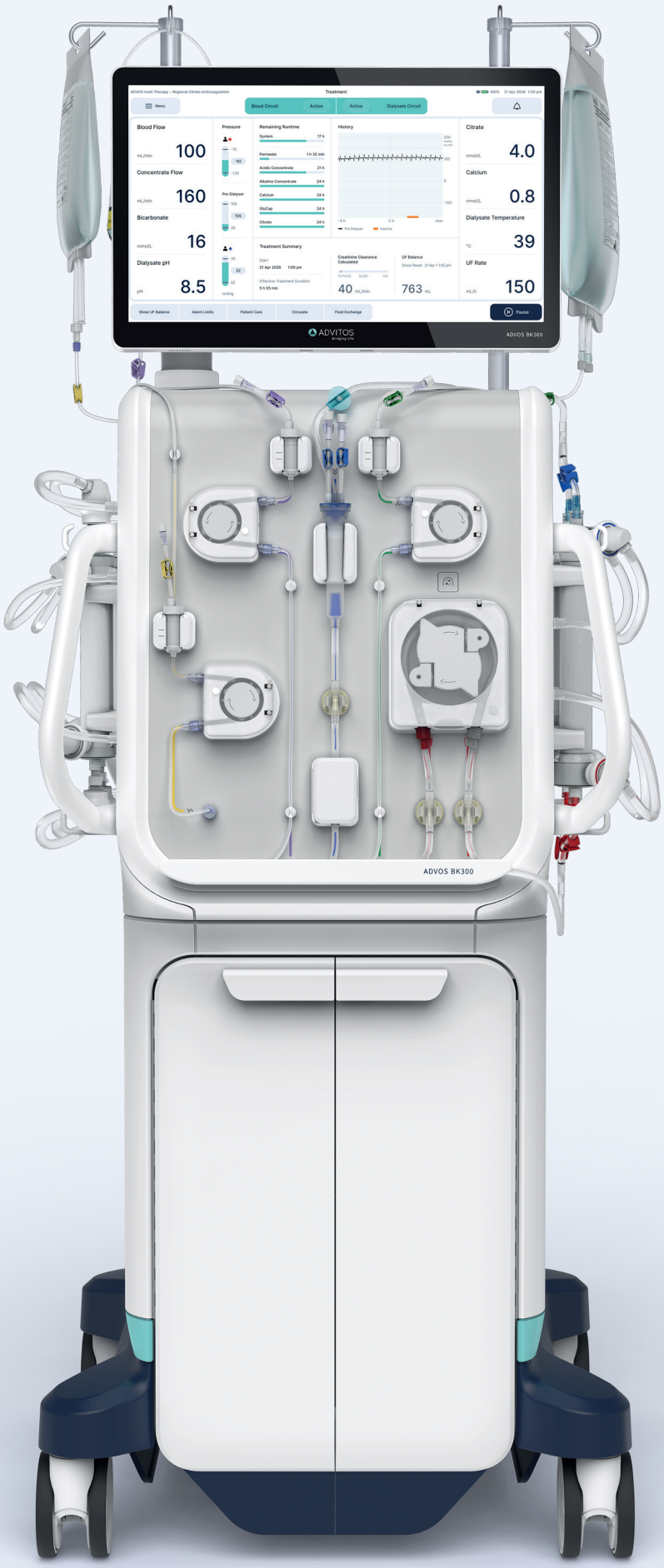
Safe medication dosing with digital support during ADVOS multi therapy



The CADDy calculator helps to calculate medication dosages during ADVOS multi therapy, thereby supporting well-informed, transparent dosing decisions.

Calculator to Approximate Drug-Dosing in Dialysis (CADDy)

www.doseeasy.de/caddy


Treatment
Menu
Blood Circuit
Active
Active
Dialysate Circuit
Blood Flow
100
mL/min
Concentrate Flow
160
mL/min
Bicarbonate
16
mmol/L
Dialysate pH
8.5
pH
Pressure
Remaining Runtime
System
17 h
Permeate
1 h 32 min
Acidic Concentrate
21 h
Alkaline Concentrate
24 h
Calcium
24 h
GluCap
24 h
Citrate
24 h
History
Treatment Summary
Start
21 Apr 2026 1:00 pm
Effective Treatment Duration
5 h 05 min
Creatinine Clearance
Calculated
40
mL/min
UF Balance
Since Reset: 21 Apr • 1:05 pm
763
mL
Citrate
4.0
mmol/L
Calcium
0.8
mmol/L
Dialysate Temperature
39
°C
UF Rate
150
mL/h
Show UF Balance
Alarm Limits
Patient Care
Circulate
Fluid Exchange
Pause
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Join us!

Connect

Doctolib Connect
Join our community
via secure messenger

Academy by ADVITOS

ADVITOS
Workshops and
events

Literature and references

1. Huber et al., BMC Gastroenterology, 2017
2. Fuhrmann et al., Annals of Intensive Care, 2020
3. Kaps et al., PLOS ONE, 2021
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5. Fuhrmann et al., PLOS ONE, 2025
6. Walter et al., Critical Care, 2024
7. Himmelein et al., Intensive Care Medicine Experimental, 2024
8. Himmelein et al., Critical Care, 2025
9. Table adapted from Fuhrmann et al., Annals of Intensive Care, 2020
10. Dibos et al., Intensive Care Medicine Experimental, 2025

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The product is currently undergoing a conformity assessment in accordance with the Medical Device Regulation (MDR) 2017/745 (EU) and is pending CE-marking prior market introduction.

ADVOS | MKT-DE | en | bro_000393 | 08/2026