

Vivaspin® 15R and Vivaspin® 20

Concentration & Purification of Clinical Biological Samples



Vivaspin® ultrafiltration concentrators are disposable devices for biological samples. Vivaspin® 15R is suitable for sample volumes from 2 to 15 ml while Vivaspin® 20 can handle samples up to 20 ml. The patented vertical membrane design and thin channel filtration chamber (US 5,647,990) minimizes membrane fouling and provides high speed concentrations. Vivaspin® 15R is supplied with the Hydrosart® membrane to provide excellent sample recovery. Vivaspin® devices are for single use and some Vivaspin® 20 products are intended for in vitro diagnostic (IVD) applications.

Vivaspin® Applications

- Concentration of urine prior to electrophoresis for diagnosis of multiple myeloma and amyloidosis.
- Desalt and exchange buffers for urine samples prior to capillary electrophoresis. Vivaspin® 20 is recommended by Sebia and Helena Labs for their capillary systems.

Features	Benefits
Vertical membrane design	Fast filtration rates.
Integrated dead stop	Reduces risk of concentration to dryness.
Low binding materials	High sample recovery.
Wide range of MW cutoffs	Choose MW cutoff for your specific application.
Large Vivaspin® family of devices	Can process samples from 100 µl to 20 ml with similar methodology.

Technical Specifications

Concentrator Capacity	Vivaspin® 15R	Vivaspin® 20
Fixed angle rotor	12.5 ml	14 ml
Swinging bucket rotor	15 ml	20 ml

Dimensions

Total Length	116 mm	116 mm
Width	30 mm	30 mm
Active membrane area	3.9 cm ²	6.0 cm ²
Hold-up volume	< 20 µl	< 20 µl
(membrane & support)		
Dead stop volume**	30 µl	50 µl
**Dead stop volume may vary depending on sample, temperature and rotor		

Materials of Construction

Body	Polycarb.	Polycarb.
Filtrate vessel	Polycarb.	Polycarb.
Concentrator cap	Polyprop.	Polyprop.
Membrane *	HY	PES

Polycarb. = Polycarbonate, Polyprop. = Polypropylene

* See other side for membrane descriptions

Equipment Required

Centrifuge

Rotor cavity	To fit 50 ml (30 mm) conical bottom tubes	To fit 50 ml (30 mm) conical bottom tubes
Fixed Rotor- Minimum Angle	25°	25°
Fixed Rotor- Max. Speed	6,000 g	6,000 g
Swinging Bucket- Max. Speed	3,000 g	4,000 g **
** lower g force for these membranes: ≥ 100,000 PES	N/A	3,000 g

Pipettes for Sample Delivery & Recovery

Fixed or variable volume may be used.
For maximum recovery, a thin gel loader type is recommended.

Membrane Selection Guide

Polyethersulfone (PES)

A good general purpose membrane for most solutions. Has low fouling characteristics with very good flow rates. Tolerates a broad pH range (from 1 to 9).

Cellulose Triacetate (CTA)

Good hydrophilic properties with very low non-specific binding. Cast without a membrane support that could bind filtered solutes. Use when recovery of filtrate is most important (free drug or hormone testing).

Hydrosart® (HY)

Similar to regenerated cellulose but with better performance characteristics and low protein binding. Good choice for concentration and desalting of proteins that may bind to other membranes such as immunoglobulin fractions.

Performance Characteristics

Time (in min.) to concentrate 30x at 20° C with rotor type shown. Also showing sample % recovery.	Vivaspin® 15R 12.5 ml@6,000 g Fixed angle		Vivaspin® 20 14 ml@6,000 g Fixed angle	
	Time	Rec.	Time	Rec.
Cytochrome c-0.25 mg/ml (12,400 MW)				
3,000 MWCO PES	N/A		180	96%
5,000 MWCO HY	45	96%	N/A	
10,000 MWCO HY	18	94%	N/A	
BSA-1.0 mg/ml (66,000 MW)				
5,000 MWCO PES	N/A		29	99%
10,000 MWCO PES	N/A		17	98%
30,000 MWCO PES	N/A		15	98%
30,000 MWCO HY	15	98%	N/A	
IgG-0.25 mg/ml (160,000 MW)				
30,000 MWCO PES	N/A		20	95%
30,000 MWCO HY	25	96%	N/A	
50,000 MWCO PES	N/A		22	95%
100,000 MWCO PES	N/A		20	90%

Ordering Information

Molecular Weight Cutoff (MWCO)	Pack Size	Vivaspin® 15R HY membrane	Vivaspin® 20 PES membrane
2,000 MWCO	12	VS15RH91	
2,000 MWCO	48	VS15RH92	
3,000 MWCO	12		VS2091
3,000 MWCO	48		VS2092
5,000 MWCO	12	VS15RH11	VS2011
5,000 MWCO	48	VS15RH12	VS2012
10,000 MWCO	12	VS15RH01	VS2001/VS2001IVD
10,000 MWCO	48	VS15RH02	VS2002/VS2002IVD
30,000 MWCO	12	VS15RH21	VS2021
30,000 MWCO	48	VS15RH22	VS2022
50,000 MWCO	12		VS2031
50,000 MWCO	48		VS2032
100,000 MWCO	12		VS2041
100,000 MWCO	48		VS2042
300,000 MWCO	12		VS2051
300,000 MWCO	48		VS2052
1,000,000 MWCO	12		VS2061
1,000,000 MWCO	48		VS2062
0.2 µm	12		VS2071
0.2 µm	48		VS2072

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