



Concentration to a defined final volume with Vivaspin® Turbo 15 and Vivaspin 500



Application
Note

#01

#02

#03

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Background info

It is sometimes desirable to be able to preselect a defined final volume for a concentration step, especially when parallel concentrations are being performed. While Vivaspin centrifugal concentrators have a built-in deadstop feature, this is intended to prevent overconcentration to dryness, which – given the fast concentration rates possible with the patented vertical membrane design in the Vivaspin® – would otherwise be a possibility. This note describes a method for achieving reproducible defined final volumes using Vivaspin® Turbo 15 and Vivaspin 500 centrifugal concentrators.

Equipment

- Vivaspin® Turbo 15 10kDa MWCO
- Vivaspin 500 10kDa MWCO
- Biohit mLINe 5 ml pipette and tips
- Biohit mLINe 200 µl ml pipette and tips
- arium® pro ultrapure water system

- Sartorius Precision Lab Balance
- Sigma Universal Centrifuge with swing out rotor for 50 ml falcon tubes
- Sigma Centrisart A-14 Centrifuge with fixed angle rotor for 24 1.5 | 2.2 ml tubes

Reagents

1 mg/ml Bovine Serum Albumin labelled with Bromophenol blue

Method

1. Add defined amount of water to the filtrate tube (see table below).
2. Put the concentrator insert into the filtrate tube and add sample solution.
3. Close the concentrator screw cap (Vivaspin® Turbo 15) or close the cap (Vivaspin 500) and place in the centrifuge.
4. Concentrate the sample.
5. Remove the concentrator insert and recover the concentrate with a pipette.

Results for Vivaspin® Turbo 15

Volume of water added to the filtrate tube	Volume of sample solution added to the concentrator insert	Spin conditions	Final concentrate volume (average of 8 devices)
11.5 ml	15 ml	20 min @ 4,000 xg	1.50 ± 0.02 ml
9.5 ml	15 ml	20 min @ 4,000 xg	0.96 ± 0.01 ml
7.5 ml	15 ml	20 min @ 4,000 xg	0.53 ± 0.02 ml

Results for Vivaspin 500 in 40° fixed angle rotor

Volume of water added to the filtrate tube	Volume of sample solution added to the concentrator insert	Spin conditions	Final concentrate volume (average of 8 devices)
500 µl	500 µl	15 min @ 15,000 xg	103 µl ± 13 µl
380 µl	500 µl	15 min @ 15,000 xg	51 µl ± 11 µl
250 µl	500 µl	15 min @ 15,000 xg	30 µl ± 5 µl
200 µl	500 µl	15 min @ 15,000 xg	23 µl ± 7 µl

Conclusion

Reproducible defined final concentrate volumes can be quickly and easily achieved with Vivaspin® Turbo 15 and Vivaspin 500.



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