

Concentration Selection Guide

Nanosep® and Microsep® Advance Centrifugal Devices

The Nanosep and Microsep concentration selection guides are meant to serve as a recommendation for concentrating protein samples. The total volume of liquid in the device determines the final retentate volume. By adding buffer under the device insert, you can set your dead stop volume and thereby select the concentration factor.

Nanosep Centrifugal Device

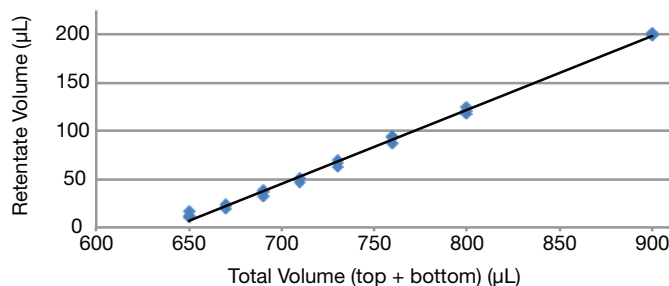
Table 1
Concentration selection for Nanosep Centrifugal Devices

Concentration Factor (Fold)	Starting Sample Volume (µL)	Volume Added to Collection Tube (µL)	Final Retentate Volume (µL)
2	200	572	100
3	200	530	67
4	200	508	50
5	200	496	40
6	200	487	33
10	200	470	20
20	200	470	10
25	200	455	8
2	300	536	150
3	300	472	100
4	300	440	75
5	300	421	60
6	300	408	50
10	300	383	30
20	300	364	15
25	300	360	12
2	400	500	200
3	400	415	133
4	400	372	100
5	400	347	80
6	400	330	67
10	400	296	40
20	400	270	20
25	400	265	16

Table 1 shows what buffer volume should be added to the collection tube under the insert to achieve desired concentration factors for 200, 300 and 400 µL starting sample volumes in the insert.

For instance, If you would like to concentrate 200 µL of starting material by ten fold (see highlight in table), the buffer volume to be added to the collection tube would be 470 µL, leaving 20 µL of concentrated material in the retentate.

Figure 1
Retentate Volume dependence on total liquid volume in Nanosep Centrifugal Devices with 30K MWCO.



An IgG solution with 1 mg/mL concentration (0.1% w/v) prepared in 1x PBS buffer was used with 200, 300 and 400 µL sample volumes in insert and additional volume in collection tube to achieve total volume indicated to and determine retentate volume in insert following centrifugation at 2,500 x g for 20 minutes.*

* Results may vary based on your own experimental conditions.

Microsep Advance Centrifugal Device

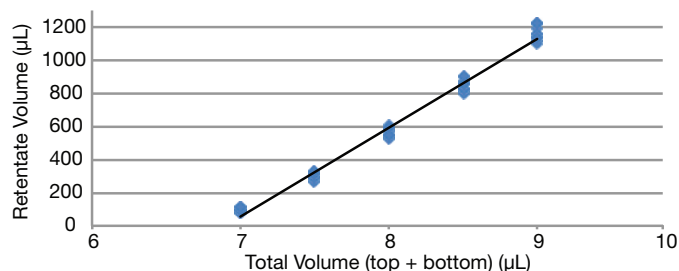
Table 2
Concentration selection for Microsep Advance Centrifugal Devices

Concentration Factor (Fold)	Starting Sample Volume (mL)	Volume Added to Collection Tube (mL)	Final Retentate Volume (mL)
2	3.00	6.69	1.50
3	3.00	5.76	1.00
4	3.00	5.29	0.75
5	3.00	5.02	0.60
6	3.00	4.83	0.50
10	3.00	4.46	0.30
20	3.00	4.18	0.15
25	3.00	4.12	0.12
4	4.00	4.76	1.00
5	4.00	4.39	0.80
6	4.00	4.14	0.667
10	4.00	3.64	0.40
20	4.00	3.27	0.20
25	4.00	3.19	0.16
4	5.00	4.23	1.25
5	5.00	3.76	1.00
6	5.00	3.45	0.833
10	5.00	2.83	0.50
20	5.00	2.36	0.25
25	5.00	2.27	0.20

Table 2 shows what buffer volume should be added to the collection tube under the insert to achieve desired concentration factors for 3, 4 and 5 ml starting sample volumes in the insert.

For instance, If you would like to concentrate 4 mL of starting material by five-fold (see highlight in table), the buffer volume to be added to the collection tube would be 4.39 mL, leaving 0.8 mL of concentrated material in the retentate.

Figure 2
Retentate Volume dependence on total liquid volume in Microsep Centrifugal Devices with 30K MWCO.



An IgG solution with 1 mg/mL concentration (0.1% w/v) prepared in 1x PBS buffer was used with 7-9 mL total volumes (insert and collection tube) to determine the retentate volume in insert following centrifugation in a swing bucket rotor at 3,000 x g for 30 minutes.*

* Results may vary based on your own experimental conditions.