

Overview

This guide offers general recommendations for common sample types to support optimal performance; additional optimization may be necessary depending on the input materials and target nanoparticles.

Sample Preparation

Step 1: Sample conditioning

The table below lists the recommended sample conditioning protocols.

Sample	Sample Conditioning
Culture medium with up to 10% serum*	<ul style="list-style-type: none"> Centrifuge at 500xg for 10min and take supernatant.
Plasma/Serum	<ul style="list-style-type: none"> Centrifuge at 10,000xg for 10min at 4°C and take supernatant. Dilute 40 times with sterile 1XPBS (no Ca²⁺ or Mg²⁺) or another preferred buffer.
Other bodily fluid with low protein concentration (<1mg/ml)	<ul style="list-style-type: none"> Centrifuge at 500xg for 10min and take supernatant. Small volume samples can be diluted with PBS or another preferred buffer to meet the minimal volume requirement.
Other bodily fluid with high protein concentration (>=1mg/ml)	<ul style="list-style-type: none"> Centrifuge at 500xg for 10min and take supernatant. Dilute samples with PBS or another preferred buffer to reduce protein concentration below 1mg/ml. Small volume samples can be diluted with PBS or another preferred buffer to meet the minimal volume requirement.

* Based on exosome depleted serum

Step 2: Pre-filtration

It is highly recommended that the sample be pre-filtered to remove large particles and debris to prevent membrane clogging and improve purity. Filter through 0.22µm PES filter (for nanoparticles <200nm) or appropriate filters for the target nanoparticles. Non-PES filters may result in higher bio-nanoparticle loss.

Step 3: Sample Loading

The table below lists the recommended sample loading volumes for each cassette. Loading more than the recommended maximum loading volume may result in significant reduction of purity. Refer to the [VanoFlow® Cassette Information Cards](#) for more information.

Cassette	Minimum Loading Volume	Maximum Loading Volume
VanoFlow-EXO-01	5ml	60ml
VanoFlow-EXO-02	10ml	125ml
VanoFlow-EXO-03	25ml	250ml

Post-processing of Purified Nanoparticles

If desired, the purified nanoparticles can be further processed for various applications or purposes. The table below provides recommendations for commonly employed protocols.

Purpose	Recommendation
Sterilization	<ul style="list-style-type: none"> Filter through 0.22µm or 0.45 µm PES filter. Non-PES filter may result in higher nanoparticle loss.
Further particle concentration	<ul style="list-style-type: none"> For 30-200nm particles, use 100kD MWCO PES concentrating column and centrifuge at 500xg until desired volume is reached.