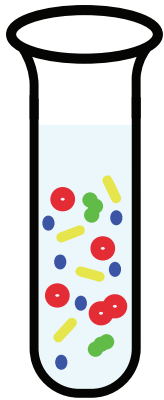


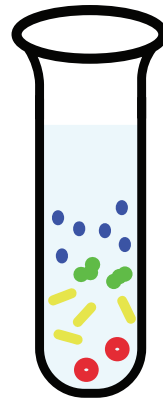
# Exosome Isolation: Density Gradient Ultracentrifugation



**1**

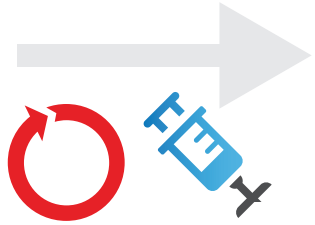
**Remove cells and cell debris**

Low force centrifugation:  
750 x g, 15 mins; 2,000 x g, 15 mins

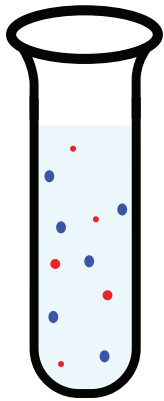


**2**

**Remove smaller debris**



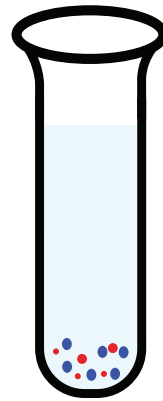
Centrifuge and filter:  
10,000 x g, 45 mins, 4°C



**3**

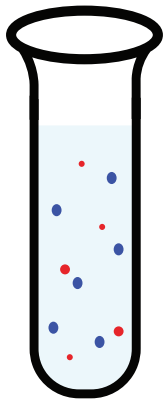
**Pellet the exosomes**

Centrifuge:  
100,000 x g, 90 mins



**4**

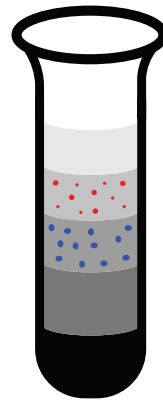
**Resuspend the pellet**



**5**

**Layer onto density gradient and ultracentrifuge**

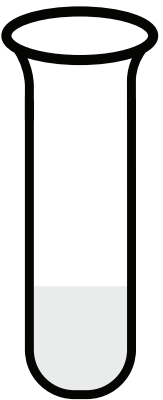
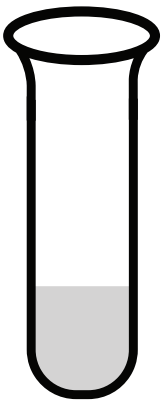
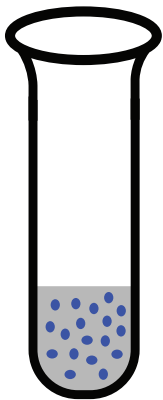
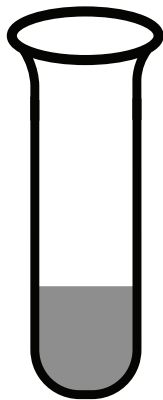
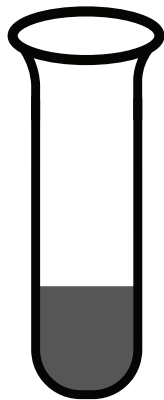
Centrifuge:  
100,000 x g, 18 hours, 4°C



**6**

**Ultracentrifuge the gradient fractions**

Centrifuge:  
100,000 x g, 60 mins



**7**

**Size determination analysis**

**8**

**Experimental characterization of exosomes**