IP A 4.4 FLUMED
Laboratoř Metalomiky a Nanotechnologií

Mendelova univerzita v Brně

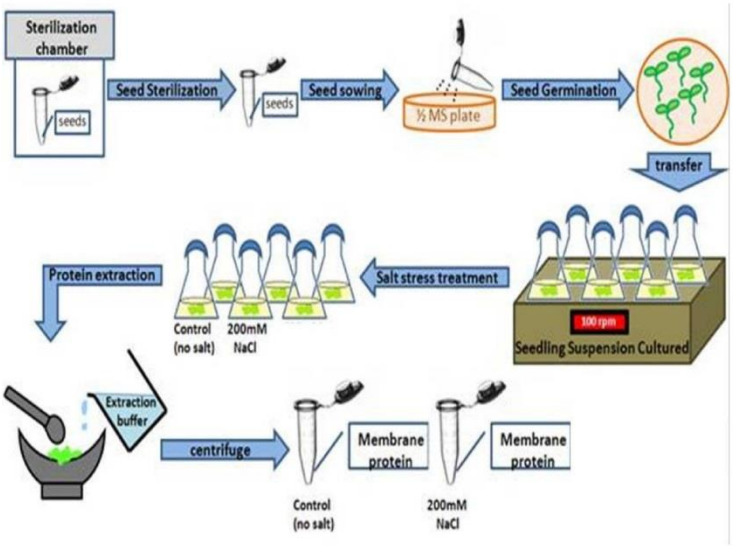
Vás zve na seminář:

Virus purification - ultracentrifugation

Ing. Bc. Petr Michálek

Abstrakt

The purification protocol utilizes *gradient ultracentrifugation* to isolate the virus particle on the basis of its size and density. When macromolecules are exposed to a centrifugal force, they will migrate away from the centrifugal axis at a speed roughly proportional to their size. Since virus particles have a unique size compared to cellular macromolecules and organelles, the rate of migration can be used as a tool for purification. This type of purification is called *velocity sedimentation*. The farther away from the centrifugal axis that the macromolecule migrates, the greater the centrifugal force becomes and in turn the rate of migration becomes more rapid. To counterbalance this increase in migration rate, centrifugation is done through a gradient of viscous liquid, such as sucrose or glycerol, so that migration will occur at a relatively constant rate irregardless of the distance from the centrifugal axis. Experimentally, centrifugation is carried out for a period of time such that the virus migrates roughly halfway through the gradient. The second way in which ultracentrifugation can be used in virus purification is on the basis of density, a technique known as *isopycnic density centrifugation*. In this technique, the virus preparation is placed on a gradient of viscous material, the bottom part of which has a greater density than does the virus. When centrifuged, the virus particles will migration until they reach their density, after which point their migration will cease.



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Podpora excelence v oblasti výzkumu chřipkových virů FLUMED IP A 4.4