## **MEMBRANE-FREE TRANSLATION SYSTEM**

As mentioned, the S-30 system contains endogenous E. coli membrane vesicles. In many cases, these may be undesirable, since it may be that membranes are to be added exogenously. To remove vesicles, a centrifugation at 135 000xg (59 000 rpm in TLA 100) is performed, and the supernatant retained as the "S135" fraction.