We have previously shown (Nilsson et al., 1996) that asymmetrical flow field-flow fractionation (asymmetrical flow FFF) can be used to separate the ribosome from the subunits and to quantitate the mass fraction of ribosome in preparations of *Escherichia coli.* The method fractionates colloidal particles based on differences in their diffusion coefficients, which depend on the hydrodynamic size. A fractionation of differently sized components is thus achieved (Giddings, 1993). The particles are transported in a laminar flow by an aqueous carrier through an open channel and are at the same time subjected to a flow of the carrier (a "crossflow") in a direction perpendicular to the axial channel flow. The sample components are thus eluted through the channel, and separated fractions can be collected. The separation mechanism is based on the balance between the crossflow-induced transport and the oppositely directed diffusional transport caused by Brownian motion. Thus the elution times for each separated component can be directly converted into hydrodynamic diameters. Separations are often finished in 2–10 min. These short separation times will give results which are more in vivo relevant than using ultracentrifugation techniques.