

# Instability of Three-Dimensional Structures in Ribosomal Cores Evidenced by Microcalorimetric Studies

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In this paper we show a microcalorimetric investigation carried out on the so-called cores, *i.e.* ribosomes deprived of select proteins by LiCl treatment. Thermal degradation of native ribosomes gives rise to two thermal transitions occurring at different temperatures. In the cores the high temperature peak persists even after treatment at very high ion strength (2 M LiCl). This strongly suggests the existence of a very stable structure that was previously observed also in particles treated with agents that hydrolyze the RNA moiety. The low temperature peak gradually but dramatically decreases even though it never disappears completely. This indicates that the treatment to obtain ribosomal cores does not cause complete unfolding of the particle but only the destabilization of a structural three-dimensional domain present in native ribosomes. These data are discussed in the light of previous results obtained by dielectric spectroscopy and microcalorimetric studies on ribosomal particles.