

Structure of yeast RNA polymerases determined by electron microscopy

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Abstract

Methods have been developed for the examination of yeast RNA polymerases I, II, and III by electron microscopy. The results enabled us to establish the size and shape of a eucaryotic RNA polymerase for the first time. The enzymes are roughly spherical in shape and compact in appearance. Their measured molecular diameters are 12.7 ± 0.4 and 11.0 ± 1.4 (SD) nm for polymerase I, 12.7 ± 1.1 and 12.2 ± 1.0 (SD) nm for polymerase II, and 13.6 ± 0.6 and 11.5 ± 1.3 (SD) nm for polymerase III.