The interaction of yeast RNA polymerase I and Cibacron Blue F3GA

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Abstract

The interaction between yeast RNA polymerase I and Cibacron blue F3GA has been studied by difference spectrophotometry and column chromatography. The enzyme is reversibly inhibited by the dye. 50% inhibition is obtained with 7.5 x 10(-6) M Cibacron blue. 1 mol Cibacron blue binds per mol enzyme. This interaction, which is inhibited by salt, occurs at a site different from the active site. When RNA polymerase I is chromatographed in Blue dextran-Sepharose columns, two polypeptides, of 48 000 and 36 000 daltons, are dissociated from the enzyme. The resulting enzyme is completely inactive, ATP (5 mM) present in the elution buffer prevents both the dissociation of the polypeptides and the inactivation of the enzyme.