EFFECT OF SDS ON THE MAJOR FRACTION OF MUSTARD PROTEIN

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ABSTRACT

A method has been developed for separating the major protein of mustard seeds into a homogenous fraction. This protein has a molecular weight of 2.3×10^5 Daltons and sedimentation coefficient of 11.7s. The effect of SDS on the protein has been followed by the techniques of ultracentrifugation, gel filtration, gel elektrophoresis, viscosity and difference spectra. At low concentrations of SDS, up to 0.1%, a slight aggregation of the protein occurs, followed by dissociation at higher concentrations. At the highest concentration of SDS, 0.5% dissociation to 1.8S fraction occurs. Viscosity increases sharply up to 0.15% SDS, remains constant between 0.15-0.30% and then increases markedly again. SDS also induces difference spectra with minima at 288 and 295 nm which perhaps are due to the perturbation of tryptophan and tyrosine groups. The results suggest that SDS causes not only dissociation of the protein but denaturation of the protein also.

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