concentration for porcine pancreatic α-amylase is 10 mM, with higher concentration producing an inhibitory effect. It has been demonstrated[2] that neutral salts at high concentration inhibit the activity of widely different enzymes in the order, of increasing effectiveness, Ac^-, Cl^-, NO_3^-, Br^-, I^-, SCN^-, ClO_4^-. The inhibition caused by neutral salts at high concentration is due to structural changes in the enzyme molecule. Such changes could be mediated by changes in solvent structure or could result from direct effects on the protein molecule. The inhibition of enzyme activity by neutral salts is probably associated with disruption of enzyme structure demonstrable at salt concentrations where partial activity remains.

Mediation of salt-induced changes in macromolecular structure by change in the organized structure of water has been suggested by Klotz[16]. Jencks[17] has interpreted on the basis of insensitivity of protein disruption to the nature of alkali cations. Robinson and Jencks[18] have presented evidence that salt effects are due to a direct action on peptide and amide groups, or possibly relocation of excluded ions at the polar–nonpolar surface, which would account for cation insensitivity[18].

It appears that the responsible mechanism is structure disruption of enzyme, resulting in accessibility of groups, which, in the absence of salts, are buried and hence nonreactive.

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ANNOUNCEMENT

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