properties of the enzyme were different [Tuschall and Hannah, 1982]. These results are not in agreement with the view that Sh2 is the regulatory gene for the formation of ADPglucose pyrophosphorylase and again supports the idea that at least Sh2 controls the ADPglucose pyrophosphorylase as a structural gene.

Molecular studies of Sh2 and Bt2 have been initiated to obtain direct information about the function of those two different genes in the control of ADPglucose pyrophosphorylase at the molecular level.

2.3 Structure of the ADPglucose Pyrophosphorylase

In E.coli the enzyme is composed of four identical subunits of 50,000 daltons [Haugen et al., 1976] and is encoded by a single gene [Baecker et al., 1983]. The make-up of the enzyme in higher plants, on the other hand, has been reported to be heterotetramers with subunits belonging to two different size classes in spinach [Morell et al., 1987a; 1987b], wheat [Olive et al., 1989], rice [Krishnan et al., 1986], and Arabidopsis [Lin et al., 1988a]. In potato tuber, the enzyme was once reported to be composed of one subunit [Sowokinos and Preiss, 1982]. On two-dimensional polyacrylamide gels, however, the purified enzyme resolved into two groups of polypeptides [Anderson et al., 1990; Okita et al., 1990]. Thus the potato tuber enzyme is composed of two distinct subunits. Maize endosperm ADPglucose