E. coli, LTNKRAKPA are LTKKRAKPA in the equivalent sequences of the plant enzymes (Figure 11).

A lysine residue at position #469 (Figure 10) is involved in activation of the spinach leaf enzyme [Morell et al., 1987a; 1988]. There was almost perfect identity in the equivalent regions of the three small subunit plant sequences at this position (Figure 12).

The tyrosine residue #178 (Figure 8) of E. coli is involved in binding of the substrates and activator [Lee and Preiss, 1986]. While this is replaced by phenylalanine in the four small subunits (Figure 10), 8 of the 10 amino acids of rice and maize and 7 of the 10 amino acids of potato and spinach in these sequences are identical with the E. coli sequence (Figure 13).

Lysine at position #263 (Figure 8) is involved in another substrate binding site in E. coli [Parsons and Preiss, 1978a; 1978b; Lee and Preiss, 1986]. This site is strictly conserved in the four equivalent sequences of small subunits at position #226 (Figure 10). The sequences of the E. coli, IIEFVEKP was IIEFAEKP in the sequences of potato, spinach and maize while the sequence of the rice was IVEFAEKP (Figure 14).

Therefore sequence divergence appears to have occurred in a non-random manner by which the biologically important sites were protected from alteration so that the subunit of the enzyme could maintain the specific structure for regulatory and catalytic functions of the plant enzyme.