

## SL325

The Stringent Response play the major role for the formation of inorganic polyphosphate in *E. coli*.

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### ABSTRACT

The second poly (p)ase has been identified as guanosine pentaphosphate phosphohydrolase(GPP). Since this enzyme is one of key enzyme in the stringent response, it has been suggested a possible interaction with a poly P formation in *E. coli*. In this paper, measured the levels of poly P in wild-type and some of its mutant derivatives when the cell cope with amino acid starvation. In wild-type *E. coli*, poly P levels increases stable manner along with ppGpp concentration. Additionally, *relA*( $\Delta$ ) or *relA spoT*( $\Delta$ ) mutant can not accumulate poly P in exponentially growing *E. coli*. Furthermore, the plasmid harboring the *relA* gene under an inducible promoter allowed us to increase the ppGpp concentration without starvation and thus, to directly observe the effect of ppGpp for the poly P formation in *E. coli*. Based on these result, this result study suggests the first direct evidence that poly P formation is dependent on ppGpp concentration.