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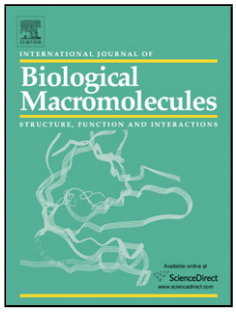

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Kinetic Analyses of Phosphorylated and Non-phosphorylated eIFiso4E Binding to mRNA Cap Analogues

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Abstract:

Phosphorylation of eukaryotic initiation factors was previously shown to interact with m^7G cap and play an important role in the regulation of translation initiation of protein synthesis. To gain further insight into the phosphorylation process of plant protein synthesis, the kinetics of phosphorylated wheat eIFiso4E binding to m^7G cap analogues were examined. Phosphorylation of wheat eIFiso4E showed similar kinetic effects to human eIF4E binding to m^7-G cap. Phosphorylation of eIFiso4E decreased the kinetic rate (2-fold) and increased the dissociation rate (2-fold) as compared to non-phosphorylated eIFiso4E binding to both mono- and di-nucleotide analogues at 22 °C. Phosphorylated and non-phosphorylated eIFiso4E-m^7G cap binding rates were found to