The mouse anterior chamber angle and trabecular meshwork develop without cell death

ABSTRACT

The findings support morphogenic mechanisms that involve the organization of cellular and extracellular matrix components without the presence of cell death or atrophy.

INTRODUCTION

The interaction between the MS2 coat protein and its translational operator is a well-established example of RNA-protein recognition, utilizing genetic, biochemical, and structural methods. Figure 1 displays the primary and secondary structures of the recombinant rRNA hairpin that establish contacts with both subunits of each coat proteins dimer. The coat protein complex with its RNA target is highly intricate, as two unpaired adenosines are inserted into equivalent pockets on different subunits of the coat dimer (Figure 2). The interactions between A-4 and A-10 with coat proteins involve non-identical contacts with the same five amino acid residues, Val29, Thr45, Ser47, Finally, and Lys61. The use of X-ray crystallographic analysis indicates specific amino acid-nucleotide interactions, but fails to provide a clear explanation of their respective roles in RNA-binding and translational repression. In the experiments described here, we used amino acid substitutions of A-pocket amino acids in single-chain coat protein heterodimers to determine the significance of each residue's interaction with A-4 and A-10.

CONCLUSION

Results showed that intracellular calcium level ([Ca2+]i) measured in mouse NIH-3T3 and human HeLa and SaOS-2 cells were significantly upregulated by ethylene, which is produced by the same plant, after being exposed to ethylene gas. The data supports earlier research that revealed an upregulation of [Ca2+]i and a marked increase in the expression of an ethylene-responsive gene, SDERR, in invertebrate cells (primmorphs of the marine sponge S. domuncula). These findings suggest that ethylene may play a role in both plant biological processes and animal one by modulating intracellular signaling pathways.