ABSTRACT

**Cleavage and Polyadenylation Specific Factor 6 (CPSF6):**
**A Possible Protein Mediator for CARM1 and pre-MRNA Splicing**

Coactivated associated methyltransferase 1 (CARM1), an enzyme that regulates cellular processes via arginine methylation, has been suggested to play a role in RNA processing and alternative splicing. The focus of this project is to identify if cleavage and polyadenylation specific factor 6 (CPSF6), a protein essential for pre-mRNA 3'-end processing, is a substrate of CARM1. We hypothesize that CPSF6 may bridge CARM1 to mRNA splicing machinery and CPSF6 itself is modified. The results suggest that CPSF6 is an *in vitro* substrate of CARM1 and the regions on CPSF6 methylated by CARM1 were narrowed down. Further research involves examining the *in vivo* interaction of CARM1 and CPSF6 and further mapping of CARM1 methylation sites on CPSF6. We will also determine whether CPSF6 is important in CARM1-mediated splicing process and whether CPSF6 methylation by CARM1 regulates dynamic association of CPSF6 with the spliceosome. Since currently CARM1 regulation of alternative splicing is not well defined, this project will provide insight into this mechanism.

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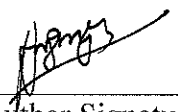

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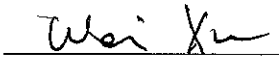

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