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# Promoter architecture analysis of developmentally regulated silkmoth chorion genes via electroporation

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The eggshell (chorion) proteins of the silkmoth *Bombyx mori* are produced exclusively in the epithelial cells that surround the developing oocyte. According to their temporal expression pattern, chorion genes are characterized as early, middle, or late. Chorion genes of the same developmental specificity are organized in divergently transcribed *α/β* gene pairs, sharing a common 5' flanking promoter region. The current model describing the developmental regulation of these genes implicates both *cis*-elements, harbored in their common 5' flanking regions and their corresponding transcription factors (BmC/EBP, BmHMGA, BmCHD1, BmGATAβ). In order to investigate the contribution of distinct *cis*-elements to temporal gene specificity, we developed an electroporation-based transient expression method for *ex vivo* developing follicles. Thus, upstream of the *lacZ* reporter gene, we have cloned the entire promoter sequence of different temporal specificity genes (5H4, 6F6.2 for early, A/B.L9, A/B.L1 for middle and Hc.12 for late stages) as positive controls, and also several differentially truncated A/B.L9 and A/B.L1 promoter regions, with the purpose of analysing single or composite *cis*-elements. Our present effort focused on the optimization of several parameters which affect the efficiency of epithelial cell transfection through the application of electric pulses on silkmoth follicles. These optimized conditions show that the method works, at least as far as positive and negative controls used. We will proceed to the analysis of the truncated and other constructs in an attempt to further elucidate the role of promoter modules in developmentally controlled gene expression but also to identify additional factors participating in chorion gene regulation.

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