F820 Analysis of the conservative and variable regions of fibroin gene promoter in *Bombyx mori*.

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누에의 견단백질은 70%이상을 점하는 fibroin과 그 주위를 싸고 있는 sericin의 두 종류의 단백질로써 구성되어 있다. 특히 fibroin은 시기, 조직 특이적으로 발현하는 강력한 promoter의 작용 하에 5령기 유충의 후부견사선에서 아주 강력한 발현을 하여 전체 체중의 약 20% 이상이나 되는 fibroin 단백질을 생산한다. Fibroin promoter region의 염기서열 결정 분석을 통하여 fibroin gene의 전사 조절에 중요한 부분이 어디인지를 알 수 있다. 본 연구는 아직 cloning이 되어 있지 않은 야잠의 L 사슬의 promoter 부위를 포함하는 5′ upstream 부위와 H 사슬은 promoter 부위를 포함하는 5′ upstream 부위와 첫 번째 intron을 포함하는 downstream 부위를 cloning하였고, 염기 서열을 결정하였다. 또한 견사를 생산하지 못하는 나용 중에서 Nd(kosiki), Nd-t, Nd-H를 야잠과 마찬가지로 L 사슬과 H 사슬 부위를 cloning하고 염기 서열 결정을 하였다. 야잠의 L 사슬을 분석한 결과 TATA box sequence와 CAAT sequence 등의 주요한 promoter 부위는 변화가 없는 것을 알 수 있었다. 이러한 결과를 분석하여 fibroin gene promoter 부위에서 변이가 있는 부위를 알아내며, 또한 보존된 부위가 어디인지를 조사함으로써 fibroin 유전자 조절에 중요한 부분을 결정하려 한다.

F821 Studies for Germ-line Transformation of *Bombyx mori* by Using Microinjection

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A transgenic animal is produced by introducing artificially a foreign gene into its genome. If an introduced foreign gene is useful, this gene is also beneficial to human economically. Here we developed basic genetic techniques. The P vector system was exploited to obtain transfomed *Bombyx mori*. The domescated silkworm, *Bombyx mori* has been the target of intensive scientific study because the silkworm has been as a source of silk for textiles and dress materials. To introduce foreign DNA we used microinjection by which DNA is injected directly into eggs through constructed fine glass needles by microinjection technique. The DNA to be injected is composed of two components. The first component is a helper plasmid capable of producing the transposase and second components, transposon construct. For this study, Lac Z was used as a reporter gene in many kinds of expression assay. The results after microinjection were that hatchability was about 1%. The inserted P has been transmitted up to F_4. To identify transformants for each generation we analyzed them by PCR and X-gal staining. We found out X-gal staining expresstion patterns were irregular at first generation, but generation after generation conspicuous mainly at the nerve system in adults. In larvae this staining was occasionally restricted in posterior silk gland. Therefore it is thought that microinjection techniques have been established.