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Changes of Proteins during Epididymal Maturation in the Acid Extracts of Boar Spermatozoa: 2-D Gel Electrophoresis AnalysisSeonghye Jeon^P, Lee S.H. Yi^C*Department of Biological Science and the Institute of Basic Science, Sungkyunkwan University, Suwon 440-746*

The changes in protein composition of the acid extracts of boar spermatozoa were analyzed by two dimensional (2-D) gel electrophoresis during epididymal transit of boar spermatozoa. Boar spermatozoa were collected from caput, corpus, and cauda epididymis and subjected to acid extraction at pH 4.0. Acid soluble fraction was then analyzed by 2-D gel electrophoresis. Comparison of the gel patterns demonstrated that there are proteins whose quantities increased from caput to cauda, where as some proteins decreased in quantities from caput to caudal epididymis. When the intensity of each protein was compared quantitatively, D1-D6 (D1; 35.8 kd/ pI 4, D2; 35.8 kd/ pI 4.2, D3; 32.5 kd/ pI 3.95, D4; 32.5 kd/ pI 4.25, D5; 28.6 kd/ pI 3.8, D6; 28.6 kd/ pI 4.15) decreased significantly in their intensities from the caput, corpus to the cauda spermatozoa when C1 (41.9 kd/ pI 5.3, C2) and C2 (41.9 kd/ pI 5.6) were used as controls. On the other hand, I1-I3 (I1; 16.8 kd/ pI 5.4, I2; 19.1 kd/ pI 5.8, I3; 20.1 kd/ pI 6.4) proteins increased in their intensities from the caput to the cauda spermatozoa.

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Purification and cDNA Cloning of a Low-abundance Protein from Larval Hemolymph of Greater Wax Moth, *Galleria mellonella*Hye-Jeong Ahn^P, Jikhyon Han¹, Dong-Hwan Seo¹, Bo-Mi Lee¹, Eun-Hwa Park¹, Chi-Young Yun^C*Department of Biology, Daejeon University, Daejeon 300-716*

A low-abundance protein from larval hemolymph of *Galleria mellonella* was purified and partially characterized. The protein was temporally named Gm27 for its molecular mass on SDS-PAGE gel. Gm27 was present in both male and female, and is present during all developmental stages. From the protein, several fragmented peptides were prepared by in-gel digestion method, and sequenced using MALDI MS/MS. RT-PCR was conducted using degenerate primers designed from the internal amino acid sequences. 5'-RACE PCR was used to obtain the complete protein coding region sequence and 5'-UTR. The full length Gm27 cDNA sequence encodes a 234 amino acid polypeptide including a potential 15-amino acid signal peptide. The deduced amino acid sequence also contains potential O-linked glycosylation sites.

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Change of Iron-binding Proteins on Iron or *E. coli* Injection into a Cricket, *Gryllus bimaculatus*Dong-Hwan Seo^P, Kyung-Pil Nam¹, Jikhyon Han¹, Iksoo Kim², Kang Sun Ryu², Sook Jae Seo³, Chi-Young Yun^C*^PDepartment of Biology, Daejeon University, Daejeon 300-716; ²Department of Sericulture and Entomology, NIAST, Suwon 441-857; ³Division of Life Science, Gyeongsang National University, Chinju 660-701*

We studied the compositional change of iron-binding proteins (IBPs) in *Gryllus bimaculatus* haemolymph by *Escherichia coli* injection. The proteins were identified by gel filtration column chromatography (GFC, G3000sw, Tosoh Co.) and PAGE. IBP fractions from GFC were stained with Ferene S. Two types of haemolymph ferritin (hFt-1 and hFt-2) were observed from *G. bimaculatus* haemolymph. It was shown that the amount of hFt-1 was increased by FeCl₃ injection, while hFt-2 was decreased. *E. coli* injection caused decrease of the amount of hFt-2, but did not affect to hFt-1. Meanwhile, another IBP was observed in a GFC fraction containing hFt-2. The protein was shown to have a molecular mass of about 80 kDa on a 10-20% SDS-PAGE gel. We supposed that the protein is *G. bimaculatus* transferrin, because the protein was increased by *E. coli* injection, and was cross-reacted against anti-horse transferrin.

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vSBP is Involved in Regulation of p27 Expression in Breast Cancer Cell LinesJungyun Lee^P, Minsup Lee¹, Jungmin Ko², Kyungchul Nho¹, Seunghwan Hong^C*^PInstitute for Molecular Biology and Genetics, Seoul National University, Seoul 151-742; ²School of Biological Sciences, Seoul National University, Seoul 151-742*

vSBP was identified as a binding protein of PLC1 SH domain and was also associated with p85a, PI3K regulatory subunit. vSBP interacted with PLC1 and p85 through PXXP motifs, and then decreased the growth rate. Expression of vSBP induced the increase of p27, CDK inhibitor. Although p27 inhibits the cell cycle, p27 is highly expressed in several cancer cells, especially breast cancer cells. Interestingly, vSBP was also expressed in breast cancer cell line MCF7 as well as p27. Moreover, vSBP has the same expressional pattern with p27 under condition of serum depletion in breast cancer cell line MDA MB 231. To investigate the relevance between vSBP and p27 in the point of expression, we introduced the vSBP sense or antisense (AS) into MCF7 and MDA MB 231 cells. In the case of MDA MB 231, vSBP and p27 were expressed under condition of serum depletion, and vSBP AS inhibited the increase of p27 at the same condition. However, growth rate of vSBP AS transfected MDA MB 231 was not inhibited by serum depletion. Furthermore, overexpression of vSBP mutant form 2mp that doesn't interact with PLC1 and p85 couldn't induce the increase of p27. As a result of transfection of vSBP sense and AS, p27 was increased or decreased by sense and AS respectively. The increase of p27 by vSBP sense induced the decrease of growth rate and the decrease of p27 by vSBP AS induced the increase of growth rate. However, vSBP AS has not same effect in soft agar culture. In the result of counting of colony, vSBP AS decreased the number of colony contrary to growth rate.