

Purification and Characterization of Vitellin from the Firefly, *Pyrocoelia rufa*

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The vitellin was purified from the eggs of *Pyrocoelia rufa* by the FPLC techniques, anion exchange chromatography and gel permeation chromatography. In nature, vitellin of *P. rufa* has molecular weight of 400 kDa. The vitellin of *P. rufa* is composed of three polypeptides, designated Vn1 (175kDa), Vn2 (160 kDa) and Vn3 (45 kDa) in SDS-polyacrylamide gel electrophoresis. Three subunits of vitellin were presented in the female adult hemolymph, ovary and egg extracts, but not observed in the male. Western blot analysis using polyclonal antiserum against purified vitellin showed that the antiserum was reacted with the three polypeptides, Vn1, Vn2 and Vn3 from the female adult hemolymph, ovary and egg extracts. Amino acid residues at N-terminus of three subunits were sequenced. The N-terminal sequences of large subunits, Vn1 and Vn2, were similar to each other. But, the N-terminal sequences of small subunit, Vn3, did not have any significant homology with large subunits.