

イニシヤトリンとそのインヒビターによる精子運動 制御機構の解明

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The regulation mechanism for sperm motility of the silkworm, *Bombyx mori*, by initiatorin and its inhibitor.

Research Project

Project/Area Number

07640899

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

動物生理・代謝

Research Institution

Kanazawa University

Principal Investigator

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Keywords

initiatorin / protease inhibitor / eupyrene sperm / apyrene sperm / spermatophore / glandula prostatica / vesicula seminalis / silkworm

Research Abstract

Initiatorin, an endopeptidase localized in the glandula (g.) prostatica of the silkworm, *Bombyx mori*, triggers the arginine degradation cascade, a specific energy-yielding system for spermatozoa. This protease activates the precursor of arginine carboxy-peptidase which acts at the second step of the arginine degradation cascade by producing free arginine from the Arg-peptide splitted by initiatorin from a substrate protein. This multi-functional

enzyme also initiates the dissociation of eusperm bundles and motility of apyrene sperm. The secreting feature from cells of the g. prostatica to its lumen was immunohistologically observed with antiserum which had been prepared from a purified initiatorin preparation. Initiatorin was isolated from the two organs, the g. prostatica and spermatophore, separately. In the former purification procedures hydrophobic interaction chromatography and cation exchange chromatography were applied, whereas affinity chromatography on p-aminobenz- amidine was ... More

Research Products (8 results)

All Other

All Publications (8 results)

[Publications] Osanai M., Kunitomo Y. and Nagaoka S.: "Glycogen phosphorylase in the male reproductive system and spermatophore of the silkmoth, Bombyx mori." J. Sericul. Sci. Jpn.64. 523-533 (1995) ▼

[Publications] Osanai M. and Isono M.: "Dissociation of eusperm bundles by acids, especially by succinate accumulated in the spermatophore of the silkmoth, Bombyx mori." Invert. Reprod. Devel.29(in press). (1996) ▼

[Publications] Minoru Osanai: "The Post-Testicular Behavior of Sperm in Lepidoptera. In "Double Spermatogenesis", ed. by K. W. Wolf" Harword Academic Press, London, 300 (1997) ▼

[Publications] 小山内 実: "昆虫の生殖:精子形成、及び交尾・受精・産卵。(三橋 淳 他編:昆虫学-基礎と応用)" 朝倉書店, ▼

[Publications] 250 (1997) ▼

[Publications] Osanai M., Kunitomo Y.and Nagaoka S.: "Glycogen phosphorylase in the male reproductive system and spermatophore of the silkmoth, Bombyx mori." J.Sericul. Sci.64. 523-533 (1995) ▼

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