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Affiliation : Department of Life Science and Biotechnology,
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Title : Professor

Researches : Bio-organic chemistry in action and regulation of insect hormones

Ph.D. : "Mode of Action of Saligenin Cyclic Phosphates on Organophosphate-Resistant Houseflies"
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Current Researches:

Characterizations, gene analyses, and mechanisms of activity regulations of proteins related to insect hormone activity and degradation during development, especially in molting and metamorphosis are being carried out with techniques of biochemistry, bio-organic chemistry, and molecular biology.

1. Juvenile Hormones (JH)

- A. JH esterasesPublication #84, 82, 72, 60, 57, 53, 40, 34, 32, 27
- B. JH epoxide hydrolasesPublication #54, 51
- C. JH binding proteins from silkwormPublication #97, 63, 59, 47, 28
- D. Enzymes for JH biosynthesis in silkworm and lipid modificationPublication #58, 29
- E. Related to virus infectionPublication #71, 39, 36, 33

2. Insect Regulators

- F. To identify a mode of action of imidazole insect growth regulator, KK-42,Publication #37, 30, 24
- G. New insect growth regulatorsPublication #94, 61, 56, 45, 44, 41, 35, 26, 25
- H. Mitochondrial membrane proteins as targets for pest control....Publication #88, 82, 79, 78, 75, 70, 69, 68, 67

3. Insect Endocrine System

- I. Endocrine system related with JHPublication #95, 93, 91, 90
- J. Genetic and functional analyses of *Bombyx* Ras & orphan receptor;Publication #50, 48, 31
- K. Quantification for JH and ecdysonePublication #62, 42, 38
- L. Regulation of phase polyphenismPublication #92, 89, 86, 83, 81, 79, 76, 73, 69

4. Detoxifying Enzymes and Insecticide Resistance

- M. Genomic analyses of carboxyl/cholinesterasesPublication #87, 55, 52, 49, 46, 43, 23
- N. Genomic analyses of glutathione-S-transferasesPublication #77, 74, 66
- I. Mechanisms of insecticide resistancePublication #85

5. Others

Publication #96 (Neonicotinoid), #68 (DNA repairment), #64 (pheromone signal)

Publications :

98. Insect growth-regulating activity of 1-benzyl-2-methylbenzimidazole derivatives on silkworms, Henmi S, Sueyoshi A, Ono H, Yamazaki T, Inoue K, Shiotsuki T, *J. Pestic. Sci.*, **48**, 99-106 (2023). doi: 10.1584/jpestics.D23-010.
97. Characteristics of the takeout protein ce-0330 in the silkworm, *Bombyx mori* (Lepidoptera: Bombycidae), Shiotsuki T, Suzuki R, Tsuchiya W, Yamazaki T, Shimomura M, Tsubota T, Nakakura T, Henmi S, *Appl. Entomol. Zool.*, **58**, 237-44. doi:10.1007/s13355-023-00827-8
96. Controlled expression of nicotinic acetylcholine receptor-encoding genes in insects uncovers distinct mechanisms of action of the neonicotinoid insecticide dinotefuran, Ozoe Y, Matsubara Y, Takaka Y, Yoshioka Y, Ozoe F, Shiotsuki T, Nomura K, Nakao T, Banba S, *Pestic. Biochem., Physiol.*, **191**, 105378 (2023). doi:10.1016/j.pestbp.2023.105378
95. Characterization of E93 in neometabolous thrips *Frankliniella occidentalis* and *Haplothrips brevitubus*. Suzuki Y, Shiotsuki T, Jouraku A, Miura K, Minakuchi C, *PLoS One* **16**, e0254963 (2021). doi: 10.1371/journal.pone.0254963
94. Ovicidal activity of juvenile hormone mimics in the bean bug, *Riptortus pedestris*. Naruse S, Ogino M, Nakagawa T, Yasuno Y, Jouraku A, Shiotsuki T, Shinada T, Miura K, Minakuchi C, *J. Pestic. Sci.*, **46**, 60-67 (2020). doi: 10.1584/jpestics.d20-075
93. Sex-specific expression profiles of ecdysteroid biosynthesis and ecdysone response genes in extreme sexual dimorphism of the mealybug *Planococcus kraunhiae* (Kuwana). Muramatsu M, Tsuji T, Tanaka S, Shiotsuki T, Jouraku A, Miura K, Vea IM, Minakuchi C., *PLoS One* **15**, e0231451 (2020). doi: 10.1371/journal.pone.0231451
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90. CRISPR/Cas9-based heritable targeted mutagenesis in *Thermobia domestica*: A genetic tool in an apterygote development model of wing evolution., Ohde T, Takehana Y, Shiotsuki T, Niimi T., *Arthropod Struct. Dev.*, **47**, 362-369 (2018). doi: 10.1016/j.asd.2018.06.003
89. Identification of a transcription factor that functions downstream of corazonin in the control of desert locust gregarious body coloration, Sugahara R, Tanaka S, Jouraku A, Shiotsuki T., *Insect Biochem. Mol. Biol.*, **97**, 10-18 (2018). doi:10.1016/j.ibmb.2018.04.004
88. Ascosteroside D, a new mitochondrial respiration inhibitor discovered by pesticidal screening using insect ADP/ATP carrier protein-expressing *Saccharomyces cerevisiae*, Shiomi K, Watanabe Y, Asami Y, Narusawa S, Hashimoto S, Iwatsuki M, Nonaka K, Shinohara Y, Shiotsuki T, Ichimaru N, Miyoshi H, and Ōmura S, *J. Antibiotics*, **71**, 146-148 (2018). doi: 10.1038/ja.2017.118
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