

Spotlight on Research

Amir Sagi, your new president

Prof. Amir Sagi was born in 1956 at Beit Zait, Israel, and is presently the Dean of the Faculty of Natural Sciences, Ben Gurion University, Beer-Sheva, Israel. He is member of the Department of Life Sciences at the National Institute for Biotechnology in the Negev. Prof. Sagi completed his M.Sc in Marine biology (1983 – 85) with distinction, and obtained his PhD from the Hebrew University, Israel in conjunction with the University of California, during 1985-1989 (University of California - Hebrew University reciprocity program).



Amir is the recipient of several honours and awards including the University of California-Hebrew University Reciprocity Scholarship; Fulbright, United States-Israel Educational Foundation (1989 – 1991); Best Lecturer of the Year in Biology, the Students Association, Ben Gurion University (1997); Young Member of the Corporation, Marine Biological Laboratory, Woods Hole, Mass. (1991); Incumbent of the Judith and Murray Shusterman Chair for Career Development in Physiology, Ben-Gurion University (1997 – 2001). Amir has also holds the Lily and Sidney Oelbaum Chair in Applied Biochemistry, Ben Gurion University (since 2010). For the last nine years he has served the ISIRD as one of the Vice Presidents.

Prof. Sagi has published more than 100 scientific publications; has 5 patents and 13 Gene Bank entries to his credit. More than 20 research students have graduated in his laboratory and he conducted numerous funded research projects. His current research interests include gonad maturation, vitellogenesis, and lipoprotein synthesis; Regulation of gene expression and proteins related to growth, molt cycle, gastrolith formation and biomineralization processes; Sexual plasticity - the regulatory role of the androgenic gland in sex-differentiation and intersexuality of crustaceans: insulin like hormones and molecular sex markers; Adaptation of crustaceans into intensive aquaculture systems, etc. The main target organisms are the freshwater prawn *M. rosenbergii*, the Red-Claw Australian crayfish, *Cherax quadricarinatus*, the White Shrimp *Litopenaeus vannamei* and various ornamental crustaceans.

He has done extensive research on constructing a cDNA library of the androgenic gland in crustaceans; specific gene expression in the androgenic gland and their functional genomics; cDNA microarray for multi-gene expression patterns in crustacean molt and reproduction; vitellogenesis in shrimp (full sequence of the vitellogenin gene and its differential expression); proteins and their encoding genes in relation to biomineralization (calcium mobilization and storage) during the molt cycle in crustaceans and their use for human consumption etc. Presently he is pursuing a project on biotechnology (novel insulin like hormones and molecular sex markers) for mass production of all male prawn populations of *M. rosenbergii* in Vietnam, India and Thailand.



Website

<http://www.bgu.ac.il/~sagia>

Selected recent publications

- Aflalo, E.D., Hoang, T.T.T., Nguyen, V.H., Lam, Q., Nguyen, D.M., Trinh, Q.S., Raviv, S., and Sagi A. 2006. A novel two-step procedure for mass production of all-male populations of the giant freshwater prawn *Macrobrachium rosenbergii*. *Aquaculture* 256: 468-478.
- Barki, A., Karplus, I., Manor, R., and Sagi, A., 2006. Intersexuality and behavior in crayfish: the de-masculinization effects of androgenic gland ablation. *Horm. Behave.* 50:322-331.
- Parnes, S., Raviv, S., Shechter, A. and Sagi, A. 2006. Males also have their time of the month! Cyclic disposal of old spermatophores, timed by the molt cycle, in a marine shrimp. *J. Exp. Biol.*, 209: 4974-4983. Also reported in Holmes, B. Males with a version of the menstrual cycle. *New Scientist*, issue 2581, December 2006 and Butvill, D.B. A male that menstruates. *BBC Wildlife*, 25(5):34, May 2007.
- Manor, R., Weil, S., Oren, S., Glazer, L., Aflalo, E.D., Ventura, T., Chalifa-Caspi, V., Lapidot, M., and Sagi A. 2007. Insulin and gender: an insulin-like gene expressed exclusively in the androgenic gland of the male crayfish. *Gen. Comp. Endocrinol.* 150(2):326-336.
- Shechter A., Berman A., Singer A., Freiman A., Grinstain M., Erez Y., Aflalo E.D and Sagi A. 2008. Reciprocal changes in calcification of the gastrolith and cuticle during the molt cycle of the red claw crayfish *Cherax quadricarinatus*. *Biol. Bull.* 214: 122–134.
- Shechter A., Glazer, L., Cheled, S., Mor, E., Weil, S., Berman A., Bentov, S., Aflalo, E.D., Khalaila, I., and Sagi A. 2008. A gastrolith protein serving a dual role in the formation of an amorphous mineral containing extracellular matrix. *Proc. Nat. Acad. Sci. USA.* 106(20): 7129-7134.
- Ventura, T., Manor, R., Aflalo, E.D., Weil, S., Raviv, S., Glazer, L., and Sagi A. 2009. Temporal silencing of an androgenic-gland-specific insulin-like gene affecting phenotypic gender differences and spermatogenesis. *Endocrinology.* 150(3): 1278-1286.
- Glazer, L., Shechter, A., Tom, M., Yudkovski, Y., Aflalo, E.D., Pamuru, R.R., Khalaila, I., Bentov, S., Berman, A., and Sagi, A. 2010. Protein involved in the Assembly of an extracellular calcium storage matrix. *J. Biol. Chem.* 285(17):12831-12839.

