

# TSAFRIR S MOR

**NAME**

Tsafrir S. Mor, Ph.D.

**POSITION:**

Assistant Professor

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**EDUCATION**

| INSTITUTION AND LOCATION  | DEGREE<br>(if applicable) | YEAR(S)       | FIELD OF STUDY         |
|---|---------------------------|---------------|------------------------|
| Hebrew University of Jerusalem, Jerusalem, Israel   | B.Sc.                     | 1989          | Biology                |
| Hebrew University of Jerusalem, Jerusalem, Israel   | M.Sc.                     | 1995          | Biochemistry           |
| Hebrew University of Jerusalem, Jerusalem, Israel   | Ph.D.                     | 1997          | Biochemistry           |
| Hebrew University of Jerusalem, Jerusalem, Israel   | Post-doc                  | 1997          | Biochemistry           |
| Boyce Thompson Institute for Plant Research at<br>Cornell University, Ithaca, NY 14853, USA | Post-doc                  | 1997-<br>2000 | Plant<br>Biotechnology |

**PROFESSIONAL EXPERIENCE**

|           |   |
|-----------|---|
| 1982-1985 | Military service, Israel Defense Force  |
| 1989-1996 | Teaching Assistant, The Institute of Life Sciences, The Hebrew University of Jerusalem, Jerusalem 91904, Israel.  |
| 1992      | Visiting scientist with Dr. Susan S. Golden (Texas A&M University, College Station, TX, USA)  |
| 1992-1993 | Visiting scientist with Dr. Himadri B. Pakrasi (Washington University, St. Louis, MO, USA)  |
| 1995      | Visiting scientist with Dr. Jean-David Rochaix (University of Geneva, Geneva, Switzerland)  |
| 1996-1997 | Post-Doctoral Fellow, The Department of Biological Chemistry, The Institute of Life Sciences, The Hebrew University of Jerusalem, Jerusalem 91904, Israel |
| 1997-2000 | Post-Doctoral Associate, Boyce Thompson Institute for Plant Research at Cornell University, Tower Rd., Ithaca, NY 14853, USA                              |
| 2000-2003 | Research Assistant Professor, Dept. of Plant Biology, Arizona State University, Tempe, AZ 85287   |

|              |   |
|--------------|---|
| 2003         | Research Assistant Professor, Biodesign Institute, Arizona State University, Tempe, AZ 85287                    |
| 2003-present | Assistant Professor, School of Life Sciences and Biodesign Institute, Arizona State University, Tempe, AZ 85287 |

## HONORS AND AWARDS

|           |  |
|-----------|--|
| 1987      | Dean's Prize, Hebrew University of Jerusalem   |
| 1988      | Dean's List, Hebrew University of Jerusalem  |
| 1990      | Edith Polak Prize, Hebrew University of Jerusalem  |
| 1991      | Rector's Prize, Hebrew University of Jerusalem   |
| 1997      | Fullbright Post-doctoral fellowship (declined)   |
| 1997-1999 | 2-year Postdoctoral Award (No. FI-251-97) from the US-Israel Binational Agricultural Research and Development Fund |
| 1999      | 1 year competitive grant awarded by the Boyce Thompson Institute   |
| 2005      | Arizona Governor's Celebration of Innovation Award   |

## TEACHING

### COURSES CREATED

- MBB247: Molecular Biology: Fundamentals and Applications (Applied Biosciences: Biotechnology). This course was designed (together with Dr. Hugh Mason) to fill a gap between the first course of the MBB sequence (MBB245/246 or BIO187) and the more advanced courses of this major. The emphasis in this major is on molecular and cellular biology and gene technology and their applications in the growing areas of biotechnology and the molecular biosciences. MBB247 was designed to demonstrate how the accumulating data in molecular biology allow the scientists to apply it toward new and unresolved basic questions as well as toward “real-world” issues in such realms as medicine, agriculture, renewable resources and environmental protection. In designing MBB247 we present molecular biology as an evolving discipline – instead of presenting the students with facts packaged into textbooks, we present a series of tentative hypotheses and allow the students to follow the experimental path leading to their acceptance. A major emphasis in the course is therefore on how the molecular biologists formulate their questions, the tools they use to try to answer these questions and how conclusions (and new questions) can be drawn from the experimental results. Likewise, the weekly assignments are planned as exercises in scientific deductive thinking. Please refer to the syllabus and samples of representative presentations and homework assignments.
- MBB248: Molecular Biology: Fundamentals and Applications Laboratory (Applied Biosciences: Biotechnology Laboratory). This is the companion lab course to MBB247 (co-requisite) and was designed to complement the lectures by providing opportunity for first hand experience with the some of the concepts and techniques introduced in the lectures of MBB247. MBB248 is further aimed at also to introducing the students to the culture of a molecular biology lab: how experiments are conceived and planned, how results are obtained, recorded, interpreted and presented, lab lingo and etiquette, team work, fun, excitement and (occasional) frustration... Following this rationale, the manual we wrote for the course is not the typical student lab cookbook. Instead, the procedures, while clearly

stated, leaves much of the experimental planning to the students under the guidance and approval of the instructors. Please refer to the appended manual chapters.

#### COURSES TAUGHT

- **MBB247 Applied Biosciences: Biotechnology** (Molecular Biology: Fundamentals and Applications)  
3 cr  
Footnote 18 course  
Applies concepts of molecular and cellular biology of bacteria, animals, and plants to real-world problems.  
Taught: Spring 2004, Spring 2005, Spring 2006, Spring 2007
- **MBB248 Applied Biosciences: Biotechnology Laboratory**  
1 cr  
Footnote 18 course  
Applies concepts of molecular and cellular biology of bacteria, animals, and plants to real-world problems.  
Taught: Spring 2004, Spring 2005, Spring 2006, Spring 2007
- **MCB500 Strategies for production of recombinant protein-pharmaceuticals**  
1-3 cr  
A graduate level seminar, where students present their own research as well as recent research literature.  
Taught: Fall 2005, Spring 2006, Fall 2006, Spring 2007
- **CBS530 Introduction to Structural and Molecular Biology**  
4 cr  
A graduate student-level introduction to structure and function of cells, proteins, membranes, and the genome; gene expression and biogenesis of structures; application of computer imaging.  
Taught: Fall 2005, Fall 2006

#### GUEST LECTURES

- **BIO294 Undergraduate Mentoring in Environmental Biology / Minority Access to Research Careers**  
Taught: Fall 2003
- **HPS410/BIO416 Professional Values/Science**  
2 Cr  
An upper division course, which considers issues related to values in science such as collaboration, finances, legal issues, media, mentoring, ownership of ideas, scientific integrity. I participated in panels discussing biotechnology and GMOs  
Taught: Spring semesters of 2001, 2002, 2003, 2005
- **PLB350 Applied Genetics**  
4 Cr  
An upper division course, Introduces molecular genetics with emphasis on application of genetics in solving biological questions and engineering organisms in biotechnology.  
Taught: Spring 2001, 2002
- **From Transgene to Organism: New Techniques in Molecular Cell Biology**  
6 Cr  
An international intensive laboratory workshop organized by Prof. Hermona Soreq, The Hebrew University of Jerusalem, Jerusalem, Israel)  
Taught: Winter 2004 (was invited in Winter 2006, but declined due timing conflict)

## MENTORING

All students are from ASU unless otherwise noted. BIO, Biology; CBS, Computational Biosciences; MBB, Molecular Biosciences and Biotechnology; MCB, Molecular and Cell Biology; PLB, Plant Biology.

### POST-DOCTORATE FELLOWS

- Nobuyuki Matoba (2001- 2006, promoted to Research Professor at Biodesign Institute)

### PHD STUDENTS, COMMITTEE CHAIR

1. Samuel P. Fletcher (PLB, 2001- 2005, Postdoc position at Scripps Institute)
2. Mrinalini Muralidharan (MCB, 2002-present)
3. Brian C. Geyer (BIO, 2005- present)

### PHD STUDENTS, COMMITTEE MEMBER

1. Kate LePore (PLB, 2002-present)
2. Lolita George (PLB, 2003-present)
3. Emel Topal (PLB, 2004-present)
4. Shuo Yuan (MCB, 2005-present)

### MSC STUDENTS, COMMITTEE CHAIR

- Irene Cherni (MCB, 2005- present)

### MSC STUDENTS, COMMITTEE MEMBER

- Greg Golden (CBS, 2005 - present)

### GRADUATE INTERNS AND ROTATION STUDENTS

- Jelena Zarkovic (PLB, Fall 2002, Rotation)
- Sarah Kessans (MCB, Summer 2006, Rotation)
- Stephen Chelladurai (CBS, Summer 2006, Intern)
- Larry Blankenship (Howard University Medical School, Summer 2005, Intern)

### UG RESEARCHERS

1. Mrinalini Muralidharan (MBB, 2001, in Graduate School)
2. Daniel Kreutz (MBB, 2002, in Medical School)
3. Mitchell Lepetich (MBB, 2003, in Dental School)
4. Jacob Jones (MBB, Honors, 2003-2004, 2006-present)
5. Jerome Clark (BIO, MARC, 2003)
6. Irene Cherni (MBB, 2003, in Graduate School)
7. Jeff Doran (MBB, 2004-2005, was hired as a tech at Biodesign Institute)
8. Brian C. Geyer (MBB, 2004, Graduate School)

9. Michael Lopker (MBB, Honors, 2004, in the Mason lab at Biodesign Institute)
10. Tagan Griffin (MBB, 2005-present))
11. Anjeli Patel (MBB, Honors, 2005-2006)
12. Ryan Woods (MBB, 2005-2006)
13. Josie Delisle (MBB, 2005-present)
14. Aaron Vassal (MBB, 2006-present)
15. Sheldon Philips (MBB, 2006-present)

#### HIGH SCHOOL INTERNS:

1. Howard Chang (Corona del Sol High School, 2006-present)
2. John Hu (Corona del Sol High School, 2006-present)

## **SERVICE**

#### BIOMEDICINE AND BIOTECHNOLOGY FACULTY

- Personnel Committee, member (2004 - 2005)

#### COMPUTATIONAL BIOSCIENCES PROGRAM

- Executive Committee, member (2005 - present)

#### SCHOOL OF LIFE SCIENCES

- Adjunct/Affiliated Committee, member (2004-Present)
- Honors and Awards Committee, member (2004-2005)
- Greenhouse Committee, chair (2005-Present)

#### EDITOR– JOURNALS

- Biotechnology Letters, Associate Editor (2005-Present)

#### AD HOC REVIEWER – JOURNALS

- Applied Microbiology and Biotechnology
- Biotechnology and Bioengineering
- FEBS Journal (Formerly European Journal of Biochemistry)
- FEBS Letters
- Journal of Molecular Biology
- Plant Molecular Biology
- Proceedings of the National Academy of Science USA

#### AD HOC REVIEWER – STATE FUNDING AGENCIES:

- Arizona State University–University of Arizona: Collaborative on Biomedical Research Grant Program

#### AD HOC REVIEWER – NATIONAL FUNDING AGENCIES:

- US Army Research Office (ARO)
- U.S. Civilian Research & Development Foundation (CRDF)

#### AD HOC REVIEWER – INTERNATIONAL FUNDING AGENCIES:

- Israel Ministry of Commerce and Industry
- Israel Ministry of Science
- Israel Science Foundation (ISF)
- Medical Research Council of South Africa (MRC)
- Natural Sciences and Engineering Research Council of Canada (NSERC).
- US-Israel Binational Agriculture Research and Development (BARD)

### **PROFESSIONAL SOCIETIES**

- American Society of Plant Biologists
- International Society of Plant Molecular Biology (disbanding in 2006)
- American Association for the Advancement of Science

### **RESEARCH SUPPORT**

Dollar figures refer to total amount of support (direct and indirect)

#### ACTIVE

- |  |  |
|--|--|
| <p>📖 (PI, Mor)<br/>USAMRICD<br/>“Plant Based Production of Butyrylcholinesterase”<br/>The major goal of this project is to produce 500 mg of BChE in plants and characterize its enzymatic characteristics.</p>  | <p>09/01/06 – 12/31/06<br/>\$50,000</p>                |
| <p>📖 U19 AI062150 (Lead PI, Arntzen; Project 2 Co-PIs, Mason and Mor)<br/>NIH<br/>“Project 2. Plant-made microbicides and mucosal vaccines for STIs”<br/>The major goal of this project is to design and produce mucosal vaccines in plant expression systems for sexually transmitted viral diseases (human papillomavirus, hepatitis B surface antigen, herpes simplex virus, human immunodeficiency virus), and to test these vaccines in pre-clinical animal trials.</p> | <p>09/01/04 – 08/31/09<br/>\$1,248,746 (Project 2)</p> |
| <p>📖 R21 AI52761-01A2 (Mor, Principal Investigator)</p>  | <p>10/1/04 – 9/30/06</p>                               |

- NIH \$450,000  
 “AIDS Prevention: Mucosally-Targeted Plant Based Vaccines”  
 The major goals are to produce mucosal-targeted vaccine candidates against HIV
- 📖 U19 Center of Excellence (David Lenz, Center Director; Mor, Project 5’s PI) 9/1/06 – 8/31/11  
 NIH \$2,693,126  
 Rapid & Large-Scale Plant-Based Production Of Catalytic Nerve-Agent Bioscavengers
- 📖 Service Agreement (Mor, PI) 10/11/06 – 1/10/07  
 USAMRICD \$50,000  
 “Evaluation of plant-derived cholinesterases as prophylactic agents against chemical warfare agents”  
 The major goal is to produce 500 mg of BChE in plants.

**COMPLETED**

- 📖 LF9 9350 (Mor, Principal Investigator) 2002-2004  
 Biodesign Institute, Arizona State University \$56,000  
 Conjugation of Antigenic Peptides to Carrier Proteins: A Model for Testing Oral Immunogenicity of Edible Vaccines
- 📖 N66001-01-C-8015 (PI) 5/1/03 – 5/2/05  
 DARPA \$1,555,035  
 Human Acetylcholinesterase Isoforms from Transgenic Plants: A Robust System for the Production and Delivery of Effective Counter Measure

**PENDING**

- 📖 Instrumentation Grant(Co-PI) 4/1/06 – 3/31/06  
 NIH \$375,496  
 BiaCore Instrument Purchase
- 📖 U01 (PI) 9/1/06 – 8/31/11  
 NIH \$3,365,881  
 Plant Based Production Of Cholinesterases As Nerve Agent Bioscavengers

**TEACHING SUPPORT****COMPLETED**

- 📖 2005 College Grant (Mor, Principal Investigator, Vermaas and Stout Co-PIs) 2005  
 College of Liberal Arts and Sciences, Arizona State University \$11,288  
 Purchase of Alphaimager Gel Imaging System for Undergraduate Laboratories in the School of Life Sciences

## ORAL PRESENTATIONS IN INTERNATIONAL FORUMS

1. Humoral immunity directed at gp41-MPR for the Prevention of HIV-1 Mucosal Transmission. International AIDS Vaccine 2006 Conference, Amsterdam, The Netherlands, August 29 - September 1 2006.
2. Towards an oral plant-derived HIV-1 subunit vaccine. Plant-Based Vaccines & Antibodies, Prague, Czech Republic, June 8-10 2005
3. Human acetylcholinesterase isoforms from transgenic plants. DARPA Principal Investigator Conference on Pathogen Countermeasures, Fort Lauderdale, FL, March 9-11, 2005
4. Translational control of recombinant human acetylcholinesterase accumulation in plants. VIIIth International Meeting on Cholinesterases, Perugia, Italy, September 26-30, 2004
5. Human acetylcholinesterase isoforms from transgenic plants. DARPA Principal Investigator Conference on Unconventional Pathogen Countermeasures, Napa, CA, May 11-13, 2004
6. Molecular Pharming: producing protein pharmaceuticals in transgenic plants. Institute Cochin, Paris, France, February, 8 2004
7. Molecular Pharming: producing protein pharmaceuticals in transgenic plants. Hebrew University of Jerusalem, Jerusalem, Israel, February, 4 2004
8. Human acetylcholinesterase isoforms from transgenic plants. DARPA Topical Meeting on Immunomodulators, Lansdown, VA, December, 3-4, 2003
9. Human acetylcholinesterase isoforms from transgenic plants. DARPA Principal Investigator Conference on Unconventional Pathogen Countermeasures Galveston, TX, April 6-10, 2003
10. Human acetylcholinesterase isoforms from transgenic plants. DARPA Topical Meeting on Immunomodulators, Bethesda, MD, October 9, 2002
11. Human acetylcholinesterase isoforms from transgenic plants. DARPA Principal Investigator Conference on Unconventional Pathogen Countermeasures, Lexington, Kentucky April 6-10, 2002
12. Human Acetylcholinesterase Isoforms from transgenic Plants. DARPA Topical Meeting on Immunomodulators, Washington DC, October 4, 2001
13. Human acetylcholinesterase isoforms from transgenic plants. DARPA Principal Investigator Conference on Unconventional Pathogen Countermeasures, San Diego, California, February 4-7, 2001
14. A system for the high-level expression of recombinant proteins in plants. International Society for Plant Molecular Biology 2000 Meeting Quebec, Quebec, Canada, June 18-23 2000
15. Expression of rotavirus proteins in transgenic plants. The IX International Congress on Plant Tissue and Cell Culture, Jerusalem, Israel June 14-19, 1998

## PUBLICATIONS

A note on the significance of the author list order. Last author position is usually reserved to the author of correspondence who is responsible of the research design and manuscript writing and its final form. The first author position in the case of primary research publications is reserved to the person most intimately connected with carrying out the experiments and drafting the manuscript. In review articles, the first author is usually the person who most substantially contributed to the writing of the manuscript. Middle authors usually contributed to the research by carrying out some of the experiments or substantially assisting in the experiments, intellectual input, experimental design etc.

An asterisk (\*) denotes members of the Mor lab. A dagger (†) denotes the author of correspondence.



JOURNAL ARTICLES:

1. Evron T, Greenberg D, **Mor TS** and †Soreq H. Adaptive changes in acetylcholinesterase gene expression as mediators of recovery from chemical and biological insults. *Toxicology* (in press)
2. \*Matoba N, \*Geyer BC, \*Kilbourne J, Alfsen A, Bomsel M and †**Mor TS** (2006) Humoral immune responses by prime-boost heterologous route immunizations with CTB-MPR649-684, a mucosal subunit HIV/AIDS vaccine candidate. *Vaccine* 24:5047-5055
3. Saldaña S, Guadarrama FE, de Jesús Olivera Flores T, Arias N, López S, Arias C, Ruiz R, Mason H, **Mor T**, Richter L, Arntzen CJ and Gómez Lim MA. (2006) Production of rotavirus-like-particles in tomato (*Lycopersicon esculentum* L.) fruit by expression of capsid proteins VP2 and VP6 and immunological studies. *Viral Immunol* 19:42-53
4. \*Geyer BC, \*Muralidharan M, \*Cherni I, \*Doran J, \*Fletcher SP, Evron, T, Soreq H and †**Mor TS** (2005) Purification of Transgenic Plant-Derived Recombinant Human Acetylcholinesterase-R. *Chem Biol Interact* 157-158:406-407
5. \*Muralidharan M, Soreq H and †**Mor, TS** (2005) Characterizing Pea Acetylcholinesterase. *Chem Biol Interact* 157-158:331-334
6. \*Matoba N, Magérus A, \*Geyer BC, Zhang Y, \*Muralidharan M, Alfsen A, Arntzen CJ, Bomsel M and †**Mor TS** (2004) Mucosally-targeted subunit vaccine candidate eliciting HIV-1 transcytosis-blocking antibodies. *Proc Natl Acad Sci USA* 101:13584–13589
7. \*Fletcher SP, \*Geyer BC, Smith A, Evron T, Joshi L, Soreq H and †**Mor TS** (2004) Tissue distribution of cholinesterases and anticholinesterases in native and transgenic tomato plants. *Plant Mol Biol* 55:33-44
8. **Mor TS**, Moon Y-S, Palmer, KE and †Mason, HS (2003) Geminivirus vectors for high level expression of foreign proteins in plant cells. *Biotechnol Bioeng* 81: 430-437
9. Mason HS, Warzecha H, **Mor T** and †Arntzen CJ (2002) Edible plant vaccines: applications for prophylactic and therapeutic molecular medicine, *Trends Mol Med* 8, 324-9
10. †**Mor TS**, Sternfeld M, Arntzen CJ, Soreq H and Mason, HS (2001) Expression of recombinant human acetylcholinesterase in transgenic tomato plants. *Biotechnol Bioeng* 75:259-266
11. †**Mor TS**, Gómez-Lim MA and Palmer, KE (1998) Edible plant vaccines: A concept coming of age. *Trends Microbiol* 6:449-453
12. **Mor TS**, Hundal T, †Ohad I and †Andersson B (1997) The fate of cytochrome b559 during anaerobic photoinhibition and its recovery processes *Photosynth Res* 53:205-213
13. **Mor TS**, Ohad I, Hirschberg J and †Pakrasi HB (1995) An unusual organization of the genes encoding cytochrome b559 in *Chlamydomonas reinhardtii*: psbE and psbF genes are separately transcribed from different regions of the plastid chromosome. *Mol Gen Genet* 246:600-604
14. Anbudurai PA, **Mor TS**, Ohad I, Shestakov SV and †Pakrasi HB (1994) The *ctpA* gene encodes the c-terminal processing protease for the D1 of the photosystem II reaction center complex *Proc Natl Acad Sci USA* 91:8082-8086
15. **Mor TS**, Post AF and †Ohad I (1993) The Manganese stabilizing protein (MSP) of *Prochlorothrix hollandica* is a hydrophobic membrane bound protein *Biochim Biophys Acta* 1141:206-212

BOOK CHAPTERS

1. \*Matoba N and †Mor TS (2005) Plant-derived subunit vaccines, In *Plant Genetic Engineering Vol. 7 B: Metabolic Engineering & Molecular Pharming* (Jaiwal PK, Ed) pp 143-183. Studium Press, Houston

2. †**Mor TS**, Mason HS, Kirk DD, Arntzen CJ and Cardineau GA (2004) Plants as a production and delivery vehicle for orally delivered subunit vaccines. In *Current Vaccines 3<sup>rd</sup> Edition* (Levine M, Ed) pp 305-312, Marcel Dekker, New York
3. †**Mor TS** and Mason HS (2004) Transgenic plants as a source for subunit vaccines. In: *Handbook of Plant Biotechnology* (Christou P and Klee H, Eds) pp 768-780, John Wiley & Sons Ltd, West Sussex
4. †**Mor TS** and Soreq H (2004) Human cholinesterases from plants for detoxification. In *Encyclopedia of Plant & Crop Science* (Goodman RM, Ed) pp 564-567, Marcel Dekker, New York
5. **Mor TS** and †Arntzen CJ (2003) Plants and Human Health: Delivery of vaccines via transgenic plants. In *Plant Biotechnology 2002 and Beyond* (Vasil, JK, Ed) pp 383-387, Kluwer Academic Publishers, Dordrecht
6. **Mor TS**, Richter, L and †Mason HS (1999) Expression of rotavirus proteins in transgenic plants. In *Plant Biotechnology and In-Vitro Biology in the 21<sup>st</sup> Century* (Altman A, Ziv M and Izhar S, Eds) pp 521-524, Kluwer Academic Publishers, Dordrecht
7. **Mor TS** and †Arntzen CJ (1999) Pharmaceutical foodstuffs: oral immunization with transgenic plants. In *Plant Biotechnology and In-Vitro Biology in the 21<sup>st</sup> Century* (Altman A, Ziv M and Izhar S, Eds) pp 17-20, Kluwer Academic Publishers, Dordrecht
8. Domovich Y, **Mor TS**, Oetmüller R, Herrman RG and †Ohad I (1995) Reversible dissociation of the OEC proteins from the lumenal side of the thylakoid membrane during photoinhibition and recovery. In *Photosynthesis: From Light to Biosphere* (Mathis P, Ed) Vol IV, pp 311-314, Kluwer Academic Publishers, Dordrecht
9. **Mor TS**, Pakrasi HB and †Ohad I (1995) The impact of the F26S mutation in the  $\beta$  subunit of cytochrome b559 on the function and stability of photosystem II in tobacco. In *Photosynthesis: From Light to Biosphere* (Mathis P, Ed) Vol I, pp 927-930, Kluwer Academic Publishers, Dordrecht
10. †Ohad I, Keren N, Zer H, Gong H, **Mor TS**, Gal A, Tal S and Domovitch Y (1993) Light induced degradation of the photochemical reaction center II D1 protein in-vivo: An integrative approach. In *The Proceedings of the 41st Harden Conference on Photoinhibition of Photosynthesis From Molecular Mechanisms to the Field* (Baker NR and Bowyer JR, Eds) pp 161-171, Bios Scientific Publishers, Oxford
11. **Mor TS**, Post, A F, and †Ohad I (1991) *Prochlorothrix hollandica* is more sensitive to photoinhibition than *Chlamydomonas reinhardtii*. In *Regulation of Chloroplast Biogenesis* (Argyroudi-Akoyunoglou JH, Ed) pp 433-438, Plenum Press, New York
12. **Mor TS**, Post, A F, and †Ohad I (1991) Characterization of the oxygen evolving system of *Prochlorothrix hollandica*. In *Regulation of Chloroplast Biogenesis* (Argyroudi-Akoyunoglou JH, Ed) pp 427-432, Plenum Press, New York
13. Gal, A, **Mor TS**, Hauska, G, Herrmann, R and †Ohad I (1990) LHCII kinase activity associated with Isolated Cytochrome b6/f complex. In *Current Research in Photosynthesis* (Baltscheffski M, Ed) Vol I pp 783-785, Kluwer Academic Publishers, Dordrecht

#### THESIS

- **Mor TS** (1996) *Dynamics of Photosystem II: Structural and Functional Aspects of Proteins Associated with the Reaction Center*. Academon Press, Jerusalem

#### ABSTRACTS (SINCE 2002, PARTIAL LIST)

1. \*Cherni, I, \*Geyer BC, \*Matoba N and **Mor TS**. MPR<sub>649-684</sub>-HBsAg Fusion as a Vaccine Candidate against HIV-I Infection. International AIDS Vaccine 2006 Conference, Amsterdam, The Netherlands, August 29 - September 1, 2006
2. \*Geyer BC and Ben-Ari, S \*Cherni I, Evron E, Soreq H and **Mor TS**. Preventable Induction of Muscle Alternative Splicing in Organophosphate-Exposed Mice Treated with Recombinant Human Acetylcholinesterase. Genomes, Evolution, & Bioinformatics (GEB2006), Tempe, Arizona, May 24-May 28, 2006
3. \*Chelladurai SA, Muralidharan M, and **Mor, TS**. Gene expression analysis for cholinesterase homologs in plants Genomes, Evolution, & Bioinformatics (GEB2006), Tempe, Arizona, May 24-May 28, 2006
4. \*Muralidharan M, Soreq H and **Mor, TS**. Characterizing a cholinesterase homologue in plants. Genomes, Evolution, & Bioinformatics (GEB2006), Tempe, Arizona, May 24-May 28, 2006
5. \*Geyer BC and Evron E, \*Cherni I, \*Muralidharan M, \*Kilbourne J, \*Fletcher SP, Soreq H and **Mor TS**. Plant-Derived Human Acetylcholinesterase-R provides protection from lethal organophosphate poisoning and its chronic aftermath. Bioscience Medical Defense Review 2006 (The U.S. Army Medical Research Institute of Chemical Defense), Hunt Valley, MD, June 4-9 2006
6. \*Matoba N, Magérus A, \*Geyer BC, Alfsen A, Hanson CV, Arntzen CJ, Bomsel M and **Mor TS**. Humoral immunity induced by CTB-MPR649-684 towards the prevention of HIV-1 mucosal transmission/infection". 12<sup>th</sup> International Congress of Mucosal Immunology, Boston, MA, June 24 – 30, 2005
7. \*Matoba M, Magerus A, \*Geyer BC, \*Zhang Y, Alfsen A, Arntzen CJ, Bomsel M and **Mor TS**. Towards an oral plant-derived HIV-1 subunit vaccine. Plant-Based Vaccines & Antibodies. PBVA 2005, Prague, Czech Republic, June 8-10, 2005. Selected for oral presentation (Mor)
8. \*Matoba M, Magerus A, \*Geyer BC, Alfsen A, Arntzen CJ, Bomsel M and **Mor TS** (2005) Humoral immunity induced by CTB-P1 for the Prevention of HIV-1 Mucosal Transmission/infection. Plant-Based Vaccines & Antibodies. PBVA 2005, Prague, Czech Republic, June 8-10, 2005 Selected for oral presentation (Matoba)
9. \*Geyer BC, Evron T, \*Cherni I, \*Muralidharan M, \*Patel A, \*Fletcher S, Soreq H and **Mor TS** (2005) *N. benthamiana* Produced Human Acetylcholinesterase Completely Protects Mice from Lethal Doses of Organophosphate Toxins. Annual Meeting of the American Society of Plant Biologists, Seattle, Washington, July 16-20, 2005
10. \*Matoba M, Magerus A, \*Geyer BC, \*Zhang Y, Alfsen A, Arntzen CJ, Bomsel M and **Mor TS**. Towards an oral plant-derived HIV-1 subunit vaccine. HIV Vaccine Development: Progress and Prospects, Keystone Symposium, Banff, AB, Canada, April 9-15, 2005.
11. \*Matoba M, Magerus A, \*Geyer BC, \*Zhang Y, \*Alfsen A, Arntzen CJ, Bomsel M and **Mor TS**. Humoral immunity induced by CTB-P1 for the Prevention of HIV-1 Mucosal Transmission/infection. HIV Vaccine Development: Progress and Prospects, Keystone Symposium, Banff, AB, Canada, April 9-15, 2005.
12. \*Muralidharan, M, \*Fletcher, SP, \*Geyer, BC, Soreq, H and **Mor TS** (2004) Characterizing pea acetylcholinesterase. VIIIth International Meeting on Cholinesterases, Perugia, Italy, September 26-30, 2004
13. \*Matoba N, **Mor TS** and Arntzen CJ (2004) Heat-stable oral vaccines from transgenic plants. Pharmaceutical Sciences World Congress 2004, Kyoto, Japan, May 30–June 3, 2004. (Invited talk, Matoba)
14. \*Fletcher SP, \*Geyer B, \*Muralidharan M, Arntzen CJ, Soreq H and **Mor TS** (2004) Chemical warfare countermeasures: Expression of human acetylcholinesterase in plants. Gordon Research Conference in Plant Molecular Biology, Plymouth, New Hampshire, July 18-23, 2004.

15. \*Matoba M, Magerus A, \*Geyer BC, \*Zhang Y, Alfsen A, \*Arntzen CJ, Bomsel M and **Mor TS** (2004) A subunit vaccine candidate to prevent HIV-1 transmission. HIV Vaccine Development: Progress and Prospects, Keystone Symposium, Whistler, BC, Canada, April 10-15, 2004
16. \*Fletcher SP, \*Geyer B, \*Muralidharan M, Joshi L, Soreq H and **Mor TS** (2003) Transgenic plants expressing human acetylcholinesterase: what they may do for us and what we may learn from them. ISPMB Congress 2003:S26-20. International Congress of Plant Molecular Biology, Barcelona, Spain, June 23-28, 2003
17. \*Fletcher SP, \*Geyer B, \*Muralidharan M, Arntzen CJ, Soreq H and **Mor TS** (2003) Chemical warfare countermeasures: Expression of human acetylcholinesterase in plants. *In-vitro Cell Dev Biol Plant* 39:28-A. Congress on *in vitro* Biology, Portland, Oregon, May 31-June 04, 2003. Selected for oral presentation (Fletcher)
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#### MANUSCRIPTS UNDERGOING REVIEW

#### MANUSCRIPTS UNDERGOING REVISION

1. \*Fletcher SP, \*Geyer BC, \*Griffin TA, \*Lopker MJ, Soreq H and †**Mor, TS**. Translational control of recombinant human acetylcholinesterase accumulation in plants. To be submitted to BMC biotechnology.
2. Evron T, ^\*Geyer BC, \*Cherni I, \*Muralidharan M, \*Fletcher SP, Soreq H and †**Mor TS**. Plant-Derived Human Acetylcholinesterase-R provides protection from lethal organophosphate poisoning and its chronic aftermath. To be submitted to PNAS
3. Mor I, Sklan EH, Podoly E, Pick M, Kirschner M, Yogev L, Schreiber L, \*Geyer BC, **Mor TS**, Grisaru D and †Soreq H. Interchanging AChE interactions with RACK1 and enolase provide dual selection advantage to male germ cells. To be submitted to Molecular Cell.

#### MANUSCRIPTS IN PREPARATION

1. \*Cherni I, \*Geyer BC, Wang K and **Mor TS** Expression of recombinant acetylcholinesterase in maize. (figures, draft-text) Biotechnology Progress
2. \*Woods, RR, \*Geyer BC and **Mor, TS**. Production of recombinant human acetylcholinesterase in hairy root cultures. (figures) To be submitted to Plant Biotechnology Journal.
3. \*Matoba N, \*Mittman M, \*Griffin TA, \*Cherni I, \*Alfsen A, Bomsel M and **Mor, TS**. Comparative analysis of a mucosal HIV vaccine candidate CTB-MPR<sub>649-684</sub> expressed in *E. coli* and *N. benthamiana* To be submitted to J Mol Biol
4. \*Matoba N, \*Griffin TA, \*Cherni I, \*Kilbourne J, Alfsen A, Bomsel M and **Mor TS**. Oral immunogenicity of a mucosal HIVvaccine candidate CTB-MPR<sub>649-684</sub> expressed in tomato. To be submitted to Plant Biotechnol J.

5. \*Geyer, BC, Ben-Ari S, Soreq H and **Mor TS**. Global changes in alternative splicing associated with organophosphate poisoning and acetylcholinesterase therapy. (most figures, statistical analysis still on going) Biochemical Pharmacology
6. \*Geyer BC, \*Delisle J, ... Soreq H and **Mor TS**. The "readthrough" variant of acetylcholinesterase directs acetylcholinesterase transcription in skeletal muscle via a TNF-alpha/NF-kB-dependent mechanism. (Some figures ready, experiments still on-going) JBC

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