**RESUME** **AMRAM MOR**

ID No. 06913690-1
Born July 26, 1954 in Casablanca, Morocco
Web site: http://www2.technion.ac.il/biotech/

## ACADEMIC DEGREES

1983 B.A. State University of New York, USA.
1987 D.E.A. University of Paris VI, France.
1990 Ph.D. University of Paris VI, France.

## ACADEMIC APPOINTMENTS

Since 2009: Full professor. Dept of Biotechnology & Food Engineering
Technion – Israel Insitute of Technology.
2002-2009: Associate professor. Department of Biotechnology & Food Engineering. Technion – Israel Insitute of Technology, Haifa, Israel.
1997-2001: Head of the antimicrobial peptides laboratory (L.A.P.I.) at the Wolfson Center for Structural Biology. The Hebrew University of Jerusalem, Israel. 1991-1996: Researcher at the Laboratoire de Bioactivation des peptides, Institut Jacques Monod, University of Paris 6, France.

## RESEARCH INTERESTS

Develop integrated multidisciplinary approaches to study the multiform **peptide function** in biological systems. This includes isolation of peptides of interest from their natural source, **mechanistic investigations** and design of structural analogs with improved properties. The lab recent efforts focus on peptide-based **antimicrobials**. Past the isolation and structural characterization stages of a native family, the **dermaseptins**, we now investigate their mechanism of action through structure-activity relationships studies using rational **design** strategies for biological and chemical synthesis of structural analogs and mimetic systems. Our aim is to correlate *in-vitro* target sites interactions (model membranes, proteins and nucleic acids) with *in-vivo* effects on pathogen and host cells. Most recent efforts focus on the development of a novel **drug delivery** system that challenges **drug-resistance** in culture and animal models.

## TEACHING EXPERIENCE

2003 todate - Design and responsibility of three new courses:
I. Introduction to Biotechnology (undergrad. 064522)
II. Introduction to Molecular Biotechnology (undergrad. 064523)
III. Peptide Biotechnology (graduates 066524)

## PUBLIC PROFESSIONAL ACTIVITIES

### Editing Activity:

2003: Guest editor of a special issue on antimicrobial peptides. PEPTIDES, International Journal (USA).
2008 todate: Member of the Editorial Board
The Journal of Probiotics and Antimicrobial Proteins (JPAAP-USA)

### Activity as Reviewer:

Guest ad-hoc reviewer of research proposals for: The Israel Science Foundation (ISF); German-Israel Foundation (GIF); US - Israel Binational Agricultural Research & Development Fund (BARD) and other foreign foundations.

Guest ad-hoc reviewer of manuscripts for international journals such as: Nature Biotech, Medicinal chemistry, Biochemistry, Eur J. biochem, Immunopharmacology, Antimicrob Agents & Chemother., FEBS, PEPTIDES, Regulatory peptides, The Journal of Infectious Diseases, …

**Participation to the elaboration of educational scientific films:**

1996: "La rainette singe au secours de la therapeutique" Duration: 26 min.
Production SFRS-CNRS audiovisuel-University Paris 6.

2006: "Antibiotics of the Future" Duration: 20 min.
Production Dr Hana Gafni, Ramot Magazine. HOT Chanel 25, Israel

**HONORS**

1991: The PFIZER Prize of Opportunistic Mycology. Awarded during the "Congres de Mycologie Medicale" Institut Pasteur Paris, France

2005: The Doudi Ben Aharon Prize for research excellence
Technion – Israel Institute of Technology

**GRADUATE STUDENTS**

**Completed Theses (MSc):**

2004: Inna Vinogradov (MSc)
**Title**: Oligo Acyl-$Q^+$ (OAQ): novel antimicrobial pseudo-peptides based on fatty acids and positively charged amino acids.

2005: Tali Rydlo (MSc)
**Title**: Antimicrobial properties of dermaseptin derivatives in food models

2005: Shahar Rotem (MSc)
**Title**: Essential biophysical requirements for potency and selectivity of AMPs

2005: Keren Marinka (MSc)
**Title**: SAR study of acylated dermaseptin derivatives

2006: Yaara Naveh-Porat (MSc)
**Title**: AMPs and Peptidomimetics for Controlling Oral Microflora

2007 Roey Mizrahi (MSc) Co-supervisor: Yuval Shoham
**Title**: Expression of dermaseptin derivatives in E. coli

2008 Dimitri Bourdetsky (MSc)
**Title**: Antiinflamatory properties of OAKs

2008 Hadar Feferovitch/Sarig (MSc)
**Title**: Structure-Activity Relationships study of short OAKs

2009 Ofra Nin Nun (MSc) Co-supervised with Pr. Yossi Miltz)
**Title**: Use of peptides in antimicrobial films for packaging of Pastrami

2009 Tchelet Kovachi (MSc)
**Title**: Structure-Activity Relationships study of OAQs

2010 Liran Livne (MSc)
**Title**: Bacterial chemo- sensitization to antibiotics by OAQs

2010 Yair Goldfeder Hojman (MSc)
**Title**: Experimental conditions that enhance potency of antibacterial OAQs

**Completed Theses (PhD):**

2008 Inna Radzishevsky (PhD)
**Title**: Oligo Acyl-Q$^+$ (OAQ): novel antimicrobial pseudo-peptides based on fatty acids and positively charged amino acids.

2008: Shahar Rotem (PhD)
**Title**: Essential biophysical requirements for potency and selectivity of AMPs

2009 Vicki Held-Kuznetsov (PhD)
**Title**: Anticancerous OAKs

2009 Lior Zisserman (PhD) co-supervisor with Pr. D. Danino
**Title**: Biological and Physicochemical Properties of Antimicrobial Peptidomimetics

2012 Hadar Feferovitch/Sarig (PhD)
**Title**: Antimicrobial properties of short OAKs in-vitro and in-vivo

**Theses in Progress (MSc Students)**

Goldberg Keren (Expected graduation 2013)
**Title**: Chemo-sensitization of Gram-negative bacteria to antibiotics by OAQs

Marjieh Ibrahim (Expected graduation 2013)
**Title**: OAQ-based bacterial capture

Meir Ohad (Expected graduation 2014)
**Title**: De-novo design of antibacterial OAQs

Ohana Dafna (Expected graduation 2014)
**Title**: OAQ-based cochleates

Joanna Jammal (Expected graduation 2014)
**Title**: SAR studies with short OACs

**Theses in Progress (PhD Students)**

Kaneti Galoz (Expected graduation 2015)
**Title**: Chemo-sensitization of Gram-positive bacteria to antibiotics by OAQs

**RESEARCH GRANTS**

1995 – 1996: IntraBiotics Inc. USA. (100,000 USD).
**Title**: Peptides for therapeutic aplications

1996 – 1997: Agence Nationale pour la Recherche Scientific (700,000FF)
**Title**: Modulation of the immune system by dermaseptins

1997 – 1998: Misrad haklita (60,000 NIS).
**Title**: Peptide-based antibiotics

1997 – 2001: MAGNET, Ministry of Commerce and Trade (1,000,000 USD).
**Title**: Peptide-based antimicrobials

1998 – 2001: Israel Science Foundation. (330,000 NIS)
**Title**: Dermaseptin derivatives for improved antimalarial activity

1999 – 2000: MAGNETON collaboration with BioMediCom Ltd (400,000 USD)
**Title**: Dermaseptin-based antimicrobials

2003-2004: US Federal CDC Grant (50,000 USD)
**Title**: Applied research on antimicrobial resistance (PA01066)

2003-2007: Israel Science Foundation (220,000 USD + 60,000 USD equipment)
**Title**: Mechanistic and functional studies of dermaseptins derivatives

2004-2005: IADR/GSK Innovation in Oral Care Award (14,000 USD)
**Title**: Antimicrobial peptides affecting dental biofilms & oral diseases

2006-2008: BioLineRx Ltd. Jerusalem, Israel (330,000 USD)
**Title**: Development of novel antimicrobial pseudo-peptides based on fatty acids and positively charged amino acids (OAQs)
2007-2008: Elias Fund for Medical Research (10,000 USD)
**Title**: Development of novel therapeutics against lung and oral cancers
2008-2009: BioLineRx Ltd. Jerusalem, Israel (200,000 USD)
**Title**: Development of novel antimalarial agents
2008-2011: Israel Science Foundation (280,000 USD + 30,000 USD equipment)
**Title**: Design and investigation of antimicrobial peptide-mimetics
2011: RBNI Technion (300,000 USD) equipment: LC/MS/MS
2011-2012: RBNI Technion (40,000 USD) co-PI: Dr Ester Segal
**Title**: Optical detection of bacteria via peptide-mimetic antimicrobial compounds tethered to nanostructured porous Si hybrids
2011-2012: Abbott (55,000 USD) co-PI: Pr Hezi Kashi
**Title**: Development of concepts for preanalytical bacterial concentration
2011-2013: ERA-NET Matera+ (100,000 €)
**Title**: Antimicrobial peptides
2012-2016: Israel Science Foundation (260,000 USD)
**Title**: Fighting antibiotic resistant bacteria with chemical mimics of host defense peptides

## RESEARCH STATEMENT

For over 20 years, my main research program has focused on studying the multiform peptide function in biological systems. Past the isolation and design stages of natural and chemical mimics, we now aim to understand their mechanism of action namely towards enhancing their therapeutic potential.

My laboratory has developed multidisciplinary approaches that exploit the advantages of peptide chemistry to enable wholesome investigation of peptides of interest while eventually improving their properties. This resulted in the identification and optimization of several novel neuropeptides (Mor et al., PNAS 1994; Trends Biochem. Sci. 1992) and antimicrobial peptides (Nicolas & Mor. Annual Rev Microbiol 1995). The latter peptides were among the first descriptions of host defense peptides (HDPs) nearly three decades ago, meanwhile, interest in this type of peptides has drastically grown to become a field of research of its own rights (Mor Peptides 2003). Thus, along with a handful of pioneers, we contributed to establish a breakthrough notion, though well accepted today, on the major role of HDPs as an integral part of the innate immune system of practically all living species.

Our subsequent structure-activity relationships (SAR) studies contributed to shed light into the peptides biological activities and modes of action (Rotem & Mor. Biochimica et Biophysica Acta 2009; Mor, FEBS J. 2009). These studies have contributed to establish peptide-based antimicrobials as a powerful investigative tool, portraying a highly manageable synthetic system that can target a wide spectrum of pathogens and is moreover, likely to significantly escape drug resistance mechanisms.

Our more recent work is focused on implementation of our findings through de-novo design of peptidomimetics including of a novel family of compounds: Oligomers of Acylated Cations (OACs) presenting advantages over natural/conventional HDPs (Radzishevsky et

al., Nature Biotechnology 2007; Chem&Biol 2008; Sarig et al., FASEB 2010; Livne et al., FASEB 2010), particularly in terms of potential applications in systemic treatment of infectious diseases and tumors (Mor, In *Antimicrobial Peptides: Discovery, Design and Novel Therapeutic Strategies*, CABI: Wallingford Oxfordshire, UK, 2010).

**PUBLICATIONS Theses**

1. Mechanism-based inactivation of Serine proteases.
   **DEA** thesis (1987) University of Paris 6, France. Advisor: Pr Michele Reboud
2. Study of the biosynthesis of two opioid peptides containing D-aminoacids: Dermorphin and Dermenkephalin.
   **PhD** thesis (1990) University of Paris 6, France. Advisor: Pr Pierre Nicolas

**Refereed papers in professional journals Published papers:**

1. A.Mor, M. Reboud-Ravaux, J.P. Mazaleyrat & M. Wakselman. Susceptibility of plasminogen activators to suicide inactivation. **Thrombosis research** (1988) 8:35-44.
2. M. Amiche, S.Sagan, A.Mor, A.Delfour & P.Nicolas. Characterization of receptor binding profile of [3H]-Dermorphin in rat brain.

**Int. J. Pept. Protein Res**. (1988) 32: 506-11.

3. A.Mor, A. Delfour, C.Sagan, M.Amiche, P.Pradelles, J.Rossier, P.Nicolas. Isolation of Dermenkephalin from amphibian skin, a high affinity, δ-selective opioid peptide, containing a D-aminoacid.

**FEBS Lett**. (1989) 255: 269-274.

4. S. Sagan, M.Amiche, A.Delfour, A.Mor, A.Camus & P.Nicolas. Molecular determinants of receptor affinity and selectivity of natural opioid agonist, Dermenkephalin. **J. Biol. Chem**. (1989) 264:17100-06.
5. S.Sagan, M.Amiche, A.Delfour, A.Camus, A.Mor & P.Nicolas. Differential contribution of Dermorpnin and Dermenkephalin's C-terminal regions to opioid sites selection.

**Biochem. Biophys. Res. Commun**. (1989) 163: 726-732.

6. M.Amiche, S.Sagan, A.Mor, A.Delfour, P.Nicolas. Dermenkephalin (Tyr-D.Met-Phe-HisLeu-Met-Asp-NH2) a potent and specific agonist for the delta opioid receptor. **Mol. Pharmacol**. (1989) 35: 774-779.
7. A.Mor, A.Delfour, Amiche, S.Sagan, P.Nicolas, J.Grassi, P.Pradeles. Dermorphin and related peptides in rat tissues.

**Neuropeptides** (1989) 13: 51-57.

8. M. Amiche, S. Sagan, A.Mor, J.J. Montagne, A. Delfour & P. Nicolas. Dermorphin, a naturally occuring peptide containing a D-aminoacid, is specific agonist for μ-receptor.

**Peptides** (1989) 174: 503-507.

9. A.Mor, P.Pradelles, A. Delfour, J.Montagne, M.Conrath & P.Nicolas. Evidence for prodermorphin processing products in rat tissues.

**Biochem. Biophys. Res. Commun**. (1990) 170:30-38.

10. M.Amiche, S.Sagan, A. Mor, D.Pelaprat, W.Rostene & P.Nicolas. Characterization & visualization of dermorphin binding to μ-opioid receptors in rat **Eur. J. Biochem**. (1990) 189: 625-635.
11. A. Mor, J. Maillard, C. Favreau & M. Reboud-Ravaux. Reaction of proteinases of the fibrinolytic system with a mechanism-based inhibitor. **Biochim. Biophys. Acta** (1990) 1038:119-124.

12. A. Mor, A. Delfour & P. Nicolas. Identification of a D-alanine containing precursor for peptide opioid, dermorphin.
**J. Biol. Chem**. (1991) 266: 6264-70.
13. A.Mor, V.H.Nguyen, A. Delfour, D. Migliore & P. Nicolas. Isolation, aminoacid sequence & synthesis of dermaseptin, a novel AMP of the amphibian skin.
**Biochemistry** (1991) 30: 8824-8830.
14. A. Mor, V.H. Nguyen & P. Nicolas.
Antifungal activity of dermaseptin, a vertebrate skin peptide.
**J. Mycol. Med**. (1991) 1: 5-10.
15. C. Hernandez, A.Mor, F. Dagger, P. Nicolas, A. Hernandez, L. Benedetti & I. Dunia.
Functional and structural damages in L. mexicana exposed to dermaseptin.
**Eur. J. Cell Biol**. (1992) 59: 414-24.
16. Y. Pouny, D. Rapaport, A.Mor, P. Nicolas & Y. Shai. Interaction of antimicrobial dermaseptin and its fluorescently labeled analogs with phospholipid membranes.
**Biochemistry** (1992) 31: 12416-12423.
17. A. Mor, M.A. Rouffaud, J.J. Montagne,V.H. Nguyen & P. Nicolas.
Natural and synthetic dermaseptins: large spectrum AMPs. **J.**
**Mycol. Med**. (1993) 3, 137-143.
18. A. Mor, K. Hani & P. Nicolas. The vertebrate peptide antibiotics dermaseptins have overlapping stuctural features but target specific microrganisms. **J. Biol. Chem**. (1994) 269, 31635-31641.
19. A.Mor, N.Chartrel, H.Vaudry & P.Nicolas. Skin Peptide YY (SPYY) a novel member of the pancreatic polypeptide family: Isolation, structure, synthesis and endocrine activity.
**Proc. Natl. Acad. Sci. USA** (1994) 91, 10295-9.
20. J. Strahilevitz, A. Mor, P. Nicolas & Y.Shai. Spectrum of antimicrobial activity and assembly of dermaseptin b and its precursor form in phospholipid membranes.
**Biochemistry** (1994) 33, 10951-10961.
21. M.Amiche, F.Ducancel, A. Mor, J.C.Boulain, A.Menez & P.Nicolas. Precursors of vertebrate peptide antibiotics, dermaseptin b and adenoregulin exhibit extensive sequence identities with precursors of opioid dermorphins.
**J. Biol. Chem.** (1994) 269, 17847-52.
22. A. Mor, M. Amiche & P. Nicolas. Structure, synthesis and activity of dermaseptin b a novel vertebrate defensive peptide from frof skin.
**Biochemistry** (1994) 33, 6642-6650.
23. A. Mor & P. Nicolas. Isolation and structure of novel defensive peptides from frog skin.
**Eur. J. Biochem**. (1994) 219, 145-154.
24. A. Mor & P.Nicolas. The N-terminal alpha-helical domaine 1-18 of dermaseptin is responsible for antimicrobial activity.
**J. Biol. Chem**. (1994) 269, 1934-9.
25. K.Haled, P.Nicolas & A.Mor. Structure-function relationships of antimicrobial dermaseptins.
**Peptides** (1995) 23, 47-49.
26. I.Vouldoukis, Y. Shai, P. Nicolas & A. Mor. Antimicrobial properties of skin-PYY.
**FEBS Lett.** (1996) 380, 237-240.
27. J. Gosh, D. Shaool, P. Guillaud, L. Ciceron, D. Mazier, I. Kustanovich, Y. Shai & A. Mor. Selective cytotoxicity of dermaseptin S3 towards intraerythrocytic *P. Falciparum* **J. Biol. Chem**. (1997) 272, 31609-31616.

28. T. Jouenne, A.Mor, H. Bonato & G.A. Junter. Antibacterial activity of synthetic dermaseptins against growing and nongrowing *Escherichia coli* cultures. **J. Antimicrobial Chemotherapy**. (1998) 42, 87-90.

29. B. Ammar, A.Perianin, A. Mor, G. Sarfati, M. Tissot, P. Nicolas, JP. Giroud, MR. Arveiller. Dermaseptin, a peptide antibiotic, stimulates microbicidal activities of PMN leukocytes **Biochem. Biophys. Res. Commun**. (1998) 247, 870-5.

30. N. BarNun, A.Mor & A. M. Mayer. A cofactor requirement for polygalacturonase from *Cuscuta campestris*.
**Phytochemistry** (1999) 52, 1217-1221.

31. J. Gosh, I. Kustanovich, Y. Shai & A.Mor. Selective cytotoxicity of dermaseptins.
**Peptide Science**-Present&Future. Shimonishi Y. Ed. (1999) 725-7

32. M.Krugliak, R.Feder, V.Zolotarev, L.Gaidukov, A.Dagan, H.Ginsburg, A.Mor Antimalarial activity of dermaseptin S4 derivatives.
**Antimicrobial Agents & Chemotherapy** (2000) 44,2442-51.

33. R. Feder, A. Dagan & A.Mor. SAR study of dermaseptin showing the consequences of oligomerization on cytotoxicity.
**J. Biol. Chem**. (2000) 275, 4230-4238.

34. R. Feder, R. Nechushtai & A.Mor. Affinity driven molecular transfer from erythrocyte membrane to target cells.
**Peptides**, (2001) 22: 1683-1690.

35. S. Navon-Venezia, R. Feder, L. Gaidukov, Y. Carmeli, & A. Mor. Antibacterial properties of short dermaseptin S4 derivatives with in vivo activity.
**Antimicrobial Agents & Chemotherapy** (2002) 46, 689-694.

36. I. Kustanovich, D.E. Shalev, L. Gaidukov & A.Mor. Structural requirements for potent versus selective cytotoxicity for antimicrobial peptides dermaseptin S4 derivatives. **J. Biol. Chem**. (2002) 277, 16941-16951.

37. A. Dagan, L. Efron, L. Gaidukov, A. Mor & H. Ginsburg.
In-Vitro Antiplasmodium Effects of Dermaseptin S4 Derivative. **Antimicrobial Agents &Chemotherapy** (2002) 46, 1059-66.

38. E.Hariton; K.Fineberg; R.Feder; A.Mor; A.Graessmann; R.Brack-Werner; C.Gilon & A.Loyter**.** Targeting of nonkaryophilic cell-permeable peptides into the nuclei of intact cells by covalently attached nuclear localization signals.
**Biochemistry** (2002) 41:9208-14.

39. L. Efron, A. Dagan, L. Gaidukov, H. Ginsburg & A. Mor. Direct Interaction of Dermaseptin S4 Aminoheptanoyl Derivative with Intraerythrocytic Malaria Parasite Leading to Increased Specific Antiparasitic Activity in Culture.
**J. Biol. Chem**. (2002) 277:24067-72.

40. DE. Shalev, A.Mor & I. Kustanovich. Structural consequences of carboxyamidation of dermaseptin S3.
**Biochemistry** (2002) 41:7312-7.

41. L. Gaidukov, A. Fish & A.Mor. Analysis of membrane-binding properties of dermaseptin analogues: relationships between binding and cytotoxicity.
**Biochemistry** (2003) 42:12866-74.

42. Sima Yaron, Tali Rydlo, Dina Shahar & A.Mor. Activity of dermaseptin K4-S4 against foodborne pathogens.
**Peptides** (2003) 24:1815-1821.

43. Balaban, N., Gov, Y., Giacommeti, A., Cirioni, O., Ghiselli, R., Mocchegiani, F., Orlando, F., D'amato., G., Saba, V., Scalise, G., Bernes, S. & Mor, A.

A chimeric peptide composed of a dermaseptin derivative and an RNA III-inhibiting peptide prevents graft-associated infections by antibiotic-resistant staphylococci.
**Antimicrobial Agents &Chemotherapy** (2004) 48:2544-2550.
44. I. Radzishevsky, S. Rotem, F. Zaknoon, L. Gaidukov, A. Dagan & A.Mor
Effects of acyl versus aminoacyl conjugation to antimicrobial peptides.
**Antimicrobial Agents & Chemotherapy** (2005) 49:2412-20 45. S.
Rotem, I. Radzishevsky, R. Inouye, M. Samore & A.Mor.
Identification of AMPs Derived from Genomic Sequences of Phage Lysins.
**Peptides** (2005) 27: 18-26
46. T. Rydlo, S. Rotem & A.Mor. Antibacterial Properties of Dermaseptin Derivatives Under Extreme Incubation Conditions.
**Antimicrobial Agents & Chemotherapy** (2006) 50: 490–497
47. D. Shalev, S. Rotem, A. Fish & A.Mor. Consequences of N-Acylation on Structure and Membrane Binding Properties of Dermaseptin Derivative $K_4$S4(1-13).
**J. Biol. Chem**. (2006) 281:9432-8
48. Shahar Rotem, I. Radzishevsky, Amram Mor. Physicochemical Properties that Enhance Discriminative Bactericidal Activity of Short Dermaseptin Derivatives **Antimicrobial Agents & Chemotherapy** (2006) 50: 2666–72
49. Altman H, Steinberg D,, Porat Y, Mor A, Fridman D, Friedman M, Bachrach G
In vitro assessment of AMPs as potential agents against several oral bacteria.
**J. Antimicrob. Chemother**. (2006) 58: 198-201
50. Joseph Miltz, Tali Rydlo, Amram Mor, and Vladimir Polyakov. Potency Evaluation of a Dermaseptin S4 Derivative for Antimicrobial Food Packaging Applications.
**Packaging Technology & Science**(2006)19:345-54
51. Porat Y, Marinka K, Tam A, Steinberg D & Mor A. Acyl-substituted Dermaseptin S4 Derivatives with Improved Bactericidal Properties on Oral Microflora
**Antimicrobial Agents & Chemotherapy** (2006)50: 4153–60
52. Keren Marynka, S. Rotem, I. Portnaya, U. Cogan, A. Mor. In vitro discriminative antipseudomonal properties resulting from acylation of truncated dermaseptin S4 derivatives
**Chemistry & Biology** (2007) 14: 75–85
53. I. Radzishevsky, M.Krugliak, H.Ginsburg, & A.Mor
Antiplasmodial Activity of Lauryl-Lysine Oligomers
**Antimicrobial Agents & Chemotherapy** (2007) 51:1753-9
54. I. Radzishevsky, R.Shahar, D.Bourdetsky, S.Venezia, Y.Carmeli, A.Mor Improved antimicrobial peptides based on acyl-lysine oligomers.
**Nature Biotechnology** (2007) 25:657-9.
55. O.Benny, SK.Kim, K.Gvili, I.Radzishevsky, A.Mor, L.Verduzco, L.G.Menon, P. M.Black, M.Machluf, R. S.Carroll. In vivo fate and therapeutic efficacy of PF-4/CTF microspheres in an orthotopic human glioblastoma model
**FASEB J** 2008 22:488-99.
56. Bachrach G, Altman H, Kolenbrander PE, Chalmers N, Gabai-Gutner M, Mor A, Friedman M & Steinberg D. Resistance of *P. gingivalis* to direct killing by antimicrobial peptides is protease independent
**Antimicrobial Agents & Chemotherapy** (2008) 52:638-642.
57. I.Radzishevsky, T.Kovachi, Y.Porat, L.Ziserman, D.Danino & A.Mor Structure-Activity Relationships of Antibacterial Acyl-Lysine Oligomers **Chemistry & Biology** (2008) 15:354-62.
58. S. Rotem, I. Radzishevsky, D.Bourdetsky, S.Venezia, Y.Carmeli, A.Mor Analogous oligo-acyl-lysines with Distinct Antibacterial Mechanisms **FASEB J** (2008) 22:2652-61.

59. Duvshani-Eshet, M., H. Keren, S. Oz, I. S. Radzishevsky, A. Mor, M. Machluf. Effect of peptides bearing NLS on therapeutic ultrasound mediated gene delivery.
**J Gene Med** (2008) 10:1150-9.
60. L.Chen, M.Hainrichson, D.Bourdetsky, A.Mor, S.Yaron, T.Baasov.
Structure-toxicity relationship of aminoglycosides: Correlation of 2'-amine basicity with acute toxicity in pseudo-disaccharide scaffolds. **Bioorganic & Medicinal Chemistry**, (2008) 16(19):8940-51.
61. H.Sarig, S.Rotem, L.Ziserman, D.Danino & A.Mor. Impact of self-assembly properties on antimicrobial activity of short acyl-lysine oligomers.
**Antimicrobial Agents & Chemotherapy,** (2008) 52(12):4308-14. 62.
R. Epand, S. Rotem, A. Mor, B. Berno, R. Epand
Bacterial membranes as a predictor of antimicrobial potency **JACS**
(2008) 130(43):14346-52.
63. F.Zaknoon, H. Sarig, S. Rotem, L. Livne, A. Ivankin, D. Gidalevitz, A. Mor. Antibacterial properties and mode of action of a short acyl-lysyl oligomer **Antimicrobial Agents & Chemotherapy** (2009) 53(8):3422-9.
64. Morris O. Makobongo, T. Kovachi, H. Gancz, A. Mor and D. Scott Merrell. In Vitro Anti-bacterial Activity of OAKs against *Helicobacter pylori* **Antimicrobial Agents & Chemotherapy** (2009) 53(10):4231-9.
65. Epand RF, Sarig H, Mor A, Epand RM. Cell-wall interactions and the selective bacteriostatic activity of a miniature oligo-acyl-lysyl.
**Biophys J**. (2009) 97:2250-7.
66. Viki Held, Shahar Rotem, Yehuda Assaraf, Amram Mor
Mimics of Host-Defense Peptides as a Platform for Novel Anticancer Drugs **FASEB J** (2009) 23:4299-307
67. Liran Livne, Tchelet Kovachi, Hadar Sarig, Raquel F. Epand, Fadia Zaknoon, Richard M. Epand and Amram Mor. Design and characterization of a broad-spectrum bactericidal acyl-lysyl oligomer
**Chemistry & Biology** (2009) 16:1250-8.
68. Hadar Sarig, Liran Livne, Victoria Held-Kuznetsov, Fadia Zaknoon, Andrey Ivankin, David Gidalevitz, Amram Mor. A miniature mimic of host defense peptides with systemic antibacterial efficacy
**FASEB J**. (2010) 24:1904-13.
69. Shahar Rotem, Nili Raz, Yehezkel Kashi, Amram Mor Bacterial capture by peptide-mimetic oligo acyl-lysine surfaces **Appl Environ Microbiol** (2010) 76:3301-7.
70. Yair Goldfeder, Fadia Zaknoon, Amram Mor.
Experimental conditions that enhance potency of an antibacterial OAK **Antimicrob. Agents & Chemother** (2010) 54:2590-5.
71. Liran Livne, Raquel Epand, Brigitte Sternberg, Richard Epand, Amram Mor. OAKbased cochleates as a novel approach to overcome MDR in bacteria.
**FASEB J**. (2010) 24:5092-101.
72. Andrey Ivankin, Anastasia Antipova, Liran Livne, Amram Mor, Gregory Caputo, William DeGrado, Mati Meron, Binhua Lin, David Gidalevitz. Role of conformational rigidity in de novo design of biomimetic antibacterial compounds **Angew. Chem. Int Ed Engl**. (2010) 49:8462-5.
73. Hadar Sarig, Yair Goldfeder, Shahar Rotem, Amram Mor. Bactericidal properties of a broad-spectrum oligo-acyl-lysyl interfering with either membrane or DNA functions.
**Antimicrob. Agents & Chemother**. (2011) 55:688–695.

74. Ziserman, Lior; Lee, Hee-Young; Raghavan, S; Mor, Amram; Danino, Dganit. Unraveling the Mechanism of Nanotube Formation by Chiral Self-Assembly of Amphiphiles. **J Am Chem Soc.** (2011) 133(8):2511-7.
75. R.Epand, H. Sarig, D. Ohana, B. Papahadjopoulos, A. Mor , R.Epand. Physical properties affecting cochleate formation and morphology using antimicrobial OAKs and mixtures mimicking composition of bacterial membranes in absence of divalent cations.

**J Phys.Chem**. **B** (2011) 115, 2287–2293.

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2002 Peptides for the activation of the immune system in humans and animals. US Patent N° 08574701 (A. Mor, I. Vouldoukis, P. Nicolas)

2002 Dermaseptin-derived peptides and their use in delivery systems.
Israeli Patent Application N° 150087 (A.Loyter, C.Gilon, A.Graessman, A. Mor, E.Hariton). US Patent Application N° 10/455,698 (2003) 2003 Antimicrobial medical implants and uses thereof.
US Provisional Patent Application N° 60/487,956 (A. Mor) PCT 27971 2004 Antimicrobial agents (A.Mor & I. Radzishevsky).
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### Invited talks:

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1991. Dermaseptine, peptide antifongique isolé de Phyllomedusa sauvagii. **Congrés de Mycologie**. Tours, France.

1992. Dermaseptine et analogues: peptides antimicrobiens modèles. **Congrès de Mycologie.** Paris, France.

1994. Structure-Function Relationships of Antimicrobial Dermaseptins **23rd European Peptide Symposium**. Braga, Portugal.

1995. Les Peptides antimicrobiens des batraciens. Cours de Chimie et Biochimie des Substances Naturelles. **Museum National d'Histoire Naturelle**, Paris.

1995. Nouvelles perspectives de traitement contre les Leishmanioses avec des peptides. **Congrès de la Société Francaise de Parasitologie**. Châtenay-Malabry, France.

1996. Peptides and Biotechnology. **Consortium DA'AT**, The Hebrew University of Jerusalem, Israel. 1997. Antimicrobial Peptides of Vertebrates. **Consortium DA'AT**, The Hebrew University of Jerusalem, Israel.

2000. Dermaseptin-based antimicrobials. **Beith Israel Deaconess Hospital**, Boston MA, USA.

2001. Peptide-based antimalarial drugs. **34th Annual Meeting of the Society for Invertebrate Pathology**. Noordwijkerhout, the Netherlands.

2002. Animal-derived antimicrobial peptides. **Annual Meeting of the Israel Society for Microbiology**, Jerusalem.

2003. Dermaseptin-based antimicrobials. **R&D and Business conference** around the theme "Partenair du Technion pour línnovation" Paris, France

2005. Consequences of N-acylation on 3D structure, binding and cytolytic properties of antimicrobial peptides. **9th International Congress on Amino Acids and Proteins**. Vienna

2006. Novel Antimicrobial Peptidomimetics Composed of Acylated Charged Amino Acids. **Natural Peptides to Drugs - NP2D**. 2nd Int. Congress, Zermatt-Switzerland

2007. Design of Novel Antimicrobial Peptidomimetics. **Gordon Research Conference on AMPs**. Il Chiocco - Italy

2007. Design of Antimicrobial Agents based on Acyl-Lysine Oligomers that Mimic Structure and Function of Host Defense Peptides. **IDDST**. Xi'an - China

2008. Biological Assessment and Mechanism of Action of Novel Antimicrobial Peptidomimetics: Oligo Acyl-Lysines. **Natural Peptides to Drugs - NP2D**. 3rd Int. Congress, Zermatt-Switzerland

2009. Consequences of unsaturated acyl substitution on biophysical properties of a short OAK with in-vivo antibacterial activity. **Gordon Research Conference on AMPs**. Ventura - USA

2009. Oligomers of acylated lysines (OAKs): mimics of host defense peptides with systemic antibacterial efficacy. **2nd International Symposium on AMPs**. Saint-Malo, France

2009. A new chemical mimic of host defense peptides with systemic efficacy in murine infection models.
**ACS 238th National Meeting**. Washington DC

2012. Chemo-Sensitization of Gram Negative Bacteria by Targeting the Membrane Potential.
**The Peptide Chemistry Conference**, Mexico

## SPECIAL PROFESSIONAL ACTIVITIES

**Scientific Advisor to Biotechnology Companies & Research Groups:**

1995-1996: IntraBiotics Pharmaceuticals Inc., Ca., USA.
1999-2001: BioMediCom Ltd. Jerusalem, Israel
2002-2005: CDC Grant (M.H. Samore) University of Utah, USA
2006-2008: BioLineRx Ltd. Jerusalem, Israel