CURRICULUM VITAE

Jeffrey Marvin Becker
Department of Microbiology
University of Tennessee
Knoxville, TN 37996-0845
Web page: http://web.bio.utk.edu/becker/

Tel: (865) 974-3006
Fax: (865) 974-4007
e-mail: jbecker@utk.edu
Home address: 7125 Cresthill Drive
Knoxville, TN 37919
Home phone: (865) 588-5294
Cell phone: (865) 806-5452

PRESENT POSITION

Chancellor's Professor Emeritus, Microbiology, University of Tennessee, Knoxville (UT)

MAJOR RESEARCH INTERESTS

Structure and Function of Peptides and their Receptors/Membrane Transport/Medical Mycology

EDUCATIONAL BACKGROUND

Emory University	B.A.	Biology	1965
Georgia State University	M.S.	Biology	1967
University of Cincinnati	Ph.D.	Microbiology	1970

FELLOWSHIPS AND SPECIAL TRAINING

Weizmann Institute Fellow	Postdoctoral	Biophysics	1971
NATO (NSF) Fellow	Postdoctoral	Biophysics	1972
Center for Disease Control	Training	Medical Mycology	1973
Research Career Development	Award (NIH)	Microbiology	1975-1980
Fogarty Senior International	Fellow (NIH)	Biochemistry	1985-1986

RESEARCH AND/OR PROFESSIONAL EXPERIENCE

Emeritus Chancellor's Professor, 2016-
Professor of Microbiology, UT, 1978-2016; Head, 2002-2016; Chancellor's, 2011-2016
Associate Prof. of Microbiology, UT, 1975-1978; Assistant Professor of Microbiology, UT, 1972-1975
Founding Director, UT-ORNL Graduate School in Genome Science and Technology, 1998-2005
Professor of Biochemistry, Cellular & Molecular Biology, UT, 1995-2002
Founding Director, Graduate Program in Cellular, Molecular, and Developmental Biology, UT, 1979-1995
Visiting Professor, Hebrew University, Jerusalem, Israel, 1985-1986
Visiting Professor, University of Puerto Rico Medical School, San Juan, 1983, 1985
NSF (NATO) Postdoctoral Fellow, Weizmann Institute, Rehovot, Israel, 1972 (Ephraim Katzir, mentor)
Weizmann Institute Postdoctoral Fellow, 1971 (Meir Wilchek, mentor)
Graduate Student, University of Cincinnati, 1967-1970 (H. C. Lichstein, mentor)

CONSULTANT/PANELIST

Nuclear Medicine Technology Group, Oak Ridge National Laboratory, 1975-1985
Smith-Kline and French Laboratories, 1984-1987
Magainin Sciences, 1988-1992
Eli Lilly, 1990-1992
ChemGenics (formerly MycoPharmaceuticals; Founder/Scientific Advisory Board), 1991-1997
Millenium Pharmaceuticals, Inc., 1997
New Chemical Entities, 1999-2001
Elitra/Mycota Pharmaceuticals, Inc., 2000-2004
Merck-Frosst, 2007-2010
NIH Study Section, Microbial Physiology; permanent, 1980-1984
NIH Study Section, SBIR Awards (1992-1993)
NIH Study Section, Special on Mycology (1994, 1996)

NIH Study Section, Special Postdoctoral Fellowships (1998)
NIH Study Section, Bacteriology and Mycology II (2003)
NIH Study Section, SSZ Panel (2004)
NIH Study Section, F13-Postdoctoral Panel (2005, 2007, 2008)
NIH Challenge Grants, June, 2009
NIH Study Section, Drug Discovery and Mechanisms of Antimicrobial Resistance (ad hoc, 2009-2010, permanent, 2011-2015)
NASA Review Panel, NNH18ZTT001N-FG2 – Research Opportunities in Space Biology (2020)

ACADEMIC SOCIETIES

American Society for Microbiology
American Society for Biochemistry and Molecular Biology
American Association for the Advancement of Science
American Chemical Society
Genetics Society of America
Medical Mycology Society of the Americas
American Peptide Society

ACADEMIC HONORS

NIH Research Career Development Awardee, 1975-1980
American Academy of Microbiology, 1979-present
Chancellors Research Scholar, 1981
Fogarty Senior International Fellow, 1985-1986
Member, Tennessee Center of Excellence/Science Alliance, 1984-2003
Alexander Prize for Teacher-Scholar, 1994
College of Arts & Sciences Marshall, 2008-09
Fellow of the American Association for the Advancement of Sciences, 2008-present
Chancellor's Professor, 2011-2016
Commencement Speaker, College of Arts & Sciences, 2016
Chancellor's Professor Emeritus, 2016-

GRANTS (Principal Investigator)

National Institutes of Health, 2014-2019, GM 1R01-GM11249601
National Institutes of Health, 1975-2013, (Renewed 8 times) R01-GM-022087
NSF (co-PI), 2008-2011
Merck-Frosst Canada, 2006-2008
National Institutes of Health, 1994-1996, AI-35262
National Institutes of Health, 1991-1995, GM-46520
American Cancer Society, 1988-1994, BC-626 (Renewed three times)
Biotechnology Research and Development Corporation, 1990-1993
U.S.-Israel Binational Science Foundation, 1987-1990, No. 86-00163
U.S.-Israel Binational Science Foundation, 1987-1990, No. 86-00139
National Institutes of Health, 1977-1988, (Renewed 2 times) AI-14387
American Cancer Society, 1984-1986, CH-290
U.S.-Israel Binational Science Foundation, 1978-1980, BSF 1545
National Institutes of Health, 1979-1981, GM-27545
National Science Foundation, 1983-1984, DMB-8219918
National Institutes of Health, 1975-1980, Career Development Award, GM-00094
American Cancer Society, 1975-1977, CH-12
National Science Foundation, 1973-1975, GB-40686
Research Corporation, 1973-1976

CONTRACTS (Principal Investigator)

MycoPharmaceuticals, Inc., 1993-1997
Eli Lilly, 1993
National Institutes of Health, 1984-1987, AI-42651

ORNL/Lockheed-Martin Energy Research, 1999-2000
UT-Batelle Research Corporation, 2000-2001
Elitra/Mycota Pharmaceuticals, 2000-2004
Merck-Frosst Pharmaceuticals, 2006-2008
ORNL/Batelle, 2010-2012

SUBCONTRACTS (Co-Principal Investigator)

National Institutes of Health, 1998-2002, NIAID-33049, (Paul Szaniszlo, U. Texas, Austin, PI)
National Institutes of Health, 2000-2004, NIAID-46351, (Paul Magee, U. Minnesota, PI)

PATENTS

6,441,134 – *Candida albicans* oligopeptide transporter gene
6,080,542 – Plant peptide transport gene
5,689,039 – Plant peptide transport gene

TEACHING

Laboratories in Biology, Bacteriology, Microbial Physiology, and Biotechnology
Microbiology for Nurses and Pre-Veterinary Students
Introduction to Microbiology
Microbial Physiology
Medical Mycology (Developed new course)
Advanced Topics in Membrane Biology
Cellular and Molecular Biology
AIDS and Society (University-wide course, developed new course)
Introduction to Graduate Studies
Grant Writing for Graduate Students (developed new course)
Freshman Studies, Human Genome and Biology
Graduate Seminars: Membrane Biology, Membrane Proteins, Bioenergy

MEETINGS/SYMPOSIA

Regular attendance/presentations - American Society for Microbiology (ASM), American Society for Biological Chemists and Molecular Biologists (ASBMB), American Peptide Symposium (APS), Yeast Cell Biology
Invited presentations/Convener - ASM, Gordon, Cold Spring Harbor, APS

RESEARCH SUPERVISION

Undergraduate research students - 200
M.S. students - 10
Ph.D. students - 35
Postdoctoral fellows - 8
Visiting professors - 6 (Iran, China, Israel, USA, Korea)

SERVICE

Department of Microbiology

1. Library Committee, 1973-1976, 1987-1988.
2. Admissions Committee, 1974-1976 (chair), 1983-1985 (chair), 1993-1995.
3. Preliminary Examination Committee, 1975-1977.
4. Curriculum Committee, 1977, 1987-1988, 1996-1999.
5. Seminar Committee, 1988-1992; 1995-1999.
6. Evaluation and Hiring of Biology Instructors, 1978-1979.
7. Electron Microscopy Facility, 1978-1985.
8. Bioanalytical Services Committee, 1980-1985.
9. Search Committees, 1975, 1988, 1990, 1996, 1999, 2000.
10. Advisory Committee, 1992-1996.
11. Development Committee, 1992-1998.
12. Interim Head, 2002

13. Head, 2003-2016.

Department of Biochemistry, Cellular, and Molecular Biology

1. Graduate Curriculum Committee, 1994-1998 (chair).
2. Graduate Affairs Committee, 1995-1998.
3. Development Committee 1998-1999, Equipment Committee, 1998-2016.

University

1. Director, Graduate Program in Cellular, Molecular, and Developmental Biology, 1979-1998.
2. Life Sciences Council, 1979-1996.
3. Graduate Council, Representative from College of Liberal Arts, 1977-1979.
4. Approval to Direct Doctoral Dissertation Committee, 1977.
5. Committees to Evaluate: Doctoral Program in Electrical Engineering (1978); New Doctoral Program in Comparative and Experimental Medicine, (1979); College of Veterinary Medicine (1983); Department of Biochemistry (1990).
6. College Scholars Tutor.
7. Committee on International Education, 1980.
8. Biotechnology degree executive committee, 1984-1997.
9. Minority Student Mentor Program.
10. Biological Sciences Review Committee, 1990.
11. Howard Hughes Undergraduate Fellows Steering Committee, 1994-2014.
12. Research and Creative Activity Self-Study Committee, 1997-1998.
13. Arts and Sciences Task Force for the Future, 1997.
14. UT-ORNL Biomedical Graduate School Committee, 1997-1998.
15. Director, UT-ORNL Graduate School in Genome Science and Technology, 1998-2005.
16. Chair, Search Committee for Head of Math Department, 2004.
17. Co-Chair, Search Committee for computational biologists for UT-ORNL Joint Institute of Computer Sciences, 2004.
18. Founding Director, UT-ORNL Graduate School in Genome Science and Technology, 1997-2005
19. Representative of Biology Division, UT-ORNL Joint Institute of Biological Sciences, 2005-2006.
20. Member, College of A&S Faculty Development Leave Committee, 2005.
21. Chair, Search Committee, Governor's Chair for the Joint Institute of Biological Sciences, 2006-2007
22. Co-Director, M-CERV (an Organized Research Unit of the UT Office of Research), 2008-2015.
22. Member, Search Committee for Dean of College of Arts & Sciences, 2011.
23. Member, College of Arts & Sciences By-Laws Revision Committee, 2012-2013.
24. Member, Professor Salary Task Force, Provost Office, 2012
25. Member, Search Committee for Head of Food Science and Technology (UTIA), 2012
26 Member, College of Arts & Sciences Budget and Planning Committee, 2012-2014
27. Chair, A&S Committee to review reappointment of Head of Department of Earth and Planetary Sciences, 2014.
28. Biology, "Head of Heads" – 2013-2016
29. Co-Chair, Microscopy Core Facility, 2010-2016
30. Co-Chair, DNA Core Facility, 2010-2016

National

1. NIH Microbial Physiology Study Section member, 1980-1984. [1989 and 1998 (*ad hoc*)].
2. NIH Special Review Study Section, SBIR grants, 1990, 1992, and 1993.
3. NIH Special Review Study Section, Opportunistic infections, 1990 and 1995.
4. NIH Special Review Study Section, Minority Biomedical Research Support, 1991.
5. Editorial Board, *Journal of Bacteriology*, 1978-1980.
6. ASM Media Consultant, 1980-1985.
7. Secretary-Treasurer, KY-TN American Society for Microbiology, 1976-1979.
8. National Committee for Clinical Laboratory Standards, Observer on Subcommittee on Antifungal Susceptibility Tests, 1992-2015.

9. American Society for Microbiology, Conference Committee, 1994-2004.
10. Editorial Board, *Antimicrobial Agents and Chemotherapy*, 1994-2015.
11. Gene and Protein Function Advisory Committee, for Oak Ridge National Laboratory, 1996.
12. NIH Special Review Study Section, Post-doctoral Fellowships, 1998.
13. Editorial Board, *Infection and Immunity*, 1999-2002.
14. NIH Bacteriology and Mycology Study Section II, 2002.
15. NIH Bacteriology and Mycology Study Section II, special review, 2003.
16. NIH Special Study Section, SSZ, regular and SBIR reviews, 2004.
17. Associate Editor, *Microbiology*, 2005-2012.
18. NIH Study Section, F13, postdoctoral fellowships, 2005, 2007, 2008.
19. American Academy of Microbiology, Selection Committee for Raymond Sarber Awards, Member, 2008-2010; Chair, 2011-2014
20. NIH DDR Study Section, Drug Discovery and Mechanisms of Antimicrobial Resistance, 2009-2010 (*ad hoc*), permanent member, 2011-2015.
21. External review member, Biological sciences, University of Arkansas, Fayetteville, Arkansas, March, 2014.
22. NIH Special Emphasis Panel, ZRG1 IDM-U (02) M, Topics in Microbial Infection Therapies, Resistance Mechanisms, and Diagnostics, April, 2019

Community

1. Heska Amuna Synagogue Board of Directors, 1975-1983; 2007-2016; Chair 2019-2021.
2. Chairman, Leadership Development Committee, Knoxville Jewish Federation (KJF), 1978-1979, 1985.
3. Board of Education, Heska Amuna Synagogue, Member, 1973-1983; Chair 1978-1981.
4. Chair, KJF Campaign, 1988-1989.
6. Board of Directors, AIDS Response Knoxville, 1990-1993.
7. President, KJF, 1992-1993.
8. Leadership Knoxville, Class of 1995
9. Chair, Israel Economic Development and Missions Committees, KJF, 1994-1997.
10. Chair, Executive Director Search Committee, KJF, 1996.
11. Chair, Endowments/Planned Giving Committee, KJF, 1998-1999.
12. Founding President, Knoxville Jewish Community Family of Funds, 1999-2005.
13. Board Member, Knoxville Jewish Community Family of Funds, 1999-present.
14. Board of Directors (National), United Jewish Communities, FRD Committee, 1999-2001.
15. Board of Directors, East Tennessee Foundation, 1999-2005.
16. Chair, Nominating and Board Development Committee, East Tennessee Foundation, 2002-2004.
17. Member, Scholarship Committee, East Tennessee Foundation, 2010 and 2011.
17. Chair and Founder, B'nai Tzedek Program, Knoxville Jewish Alliance, 2005-2014.
18. Co-Chair, Missions to Israel Committee, Knoxville Jewish Alliance, 2002-2014.
19. Board of Directors, Knoxville Jewish Day School, 2006-present, Secretary, 2013-present.
20. Board of Directors, East Tennessee Foundation, 2013-2018.
21. Vice-Chair, Board of Directors, East Tennessee Foundation, 2015.
22. Chair, Board of Directors, East Tennessee Foundation, 2016-2017.

PUBLICATIONS

1. Becker, J. M., Wilchek, M. and Katchalski, E., 1971. Irreversible Inhibition of Biotin Transport in Yeast by Biotinyl-p-nitrophenyl ester. *Proc. Natl. Acad. Sci.* U.S.A., **64**:2604-2607.

2. Becker, J. M. and Wilchek, M., 1972. Inactivation by Avidin of Biotin-Modified Bacteriophage. *Biochimica Biophysica Acta* **264**:165-170.

3. Becker, J. M. and Lichstein, H. C., 1972. Transport Overshoot During Biotin Uptake in *Saccharomyces cerevisiae*. *Biochimica Biophysica Acta* **282**:409-420.

4. Becker, J. M., Naider, F. and Katchalski, E., 1973. Peptide Utilization in Yeast; Studies on Methionine and Lysine auxotrophs of *Saccharomyces cerevisiae*. *Biochimica Biophysica Acta* **291**:388-397.

5. Naider, F., Becker, J. M. and Wilchek, M., 1974. The Use of Bromoacetyl Derivatives in the Determination of Structure-Function Relationships in Proteins. *Israel J. Chem.* **12**:441-454.

6. Naider, F., Becker, J. M. and Katchalski-Katzir, E., 1974. Utilization of Methionine-Containing Peptides and Their Derivatives by a Methionine-Requiring Auxotroph of *Saccharomyces cerevisiae*. *J. Biol. Chem.* **249**:9-20.

7. Naider, F. and Becker, J. M., 1974. Synthesis and Optical Studies of L-Methonine Oligopeptides in Solution. *Biopolymers* **13**:1011-1022.

8. Becker, J. M. and Naider, F. M., 1974. Critical Chain Length for Helix Formation in L-Methionine Oligopeptides. *Biopolymers* **13**:1747-1750.

9. Becker, J. M. and Naider, F., 1974. Stereospecificity of Tripeptide Utilization in a Methionine Auxotroph of *Escherichia coli* K-12. *J. Bacteriol.* **120**:191-196.

10. Jones, J. E., Naider, F. and Becker, J. M., 1975. Hydrolysis of Oligopeptides by Sera Used for Cell and Tissue Culture. *In vitro* **11**:41-45.

11. Naider, F. and Becker, J. M., 1975. Multiplicity of Oligopeptide Transport systems in *Escherichia coli*. *J. Bacteriol.* **122**:1208-1215.

12. Jackson, M. B., Becker, J. M., Steinfeld, A. and Naider, F., 1976. Oligopeptide Transport in Proline Peptidase Mutants of *Salmonella typhimurium*. *J. Biol. Chem.* **51**:5300-5309.

13. Lichliter, W., Naider, F. and Becker, J. M., 1976. A basis for the Design of Anti-Candidal Agents from Studies of Peptide Utilization in *Candida albicans*. *Antimicrobial Agents and Chemotherapy* **10**:483-490.

14. Becker, J. M. and Naider, F., 1977. Peptide Transport in Yeast: Uptake of Radioactive Trimethionine in *Saccharomyces cerevisiae*. *Arch. Biochem. Biophys.* **178**:245-255.

15. Marder, R., Becker, J. M. and Naider, F., 1977. Peptide Transport in Yeast: Utilization of Leucine and Lysine-containing Peptides by *Saccharomyces cerevisiae*. *J. Bacteriol.* **131**:906-916.

16. Yang, S. L., Becker, J. M. and Naider, F., 1977. Transport of [^{14}C]Gly-Pro in a proline peptidase mutant of *Salmonella typhimurium*. *Biochemica Biophysica Acta* **471**:135-144.

17. Miller, R. V. and Becker, J. M., 1978. Peptide Utilization in *Pseudomonas aeruginosa*: Evidence for membrane-associated peptidase. *J. Bacteriol.* **133**:165-171.

18. Becker, J. M., Steinfeld, A. and Naider, F., 1978. Novel Approach to the Development of Anti-Candidal Drugs. Fourth International Conference on the Mycoses, the black and white yeasts. Pan American Health Organization Scientific Publication No. 356.

19. Immirzi, A., Avena, P. Ciajolo, M. R., Becker, J. M. and Naider, F., 1978. Solid state conformation of a terminally diblocked D-Methionyl-L-methionine. *Acta Cryst.* **B34**:179-183.

20. Becker, J. M. and Naider, F., 1978. The Effect of Homologous Amino Acid Replacement on the Conformation of Oligopeptides. I. Synthesis of Co-oligopeptides containing Methionine and Valine. *Biopolymers* **17**:2189-2197.

21. Champi, J., Steinfeld, A. S., Naider, F. and Becker, J. M., 1978. The Effect of Homologous Amino Acid Replacement on the Conformation of Oligopeptides. II. Synthesis of Co-oligopeptides Containing Methionine and Valine or Methionine and Glycine. *Biopolymers* **17**:2199-2212.

22. Naider, F., Becker, J. M., Riberio, A. and Goodman, M., 1978. The Effect of Homologous Amino Acid Replacement on the Conformation of Oligopeptides. III. Circular Dichroism Studies on Co-oligopeptides of Methionine and and Glycine in Organic Solutions. *Biopolymers* **17**:2213 - 2224.

23. Marder, R., Becker, J. M. and Naider, F., 1978. Isolation of a peptide transport deficient mutant of yeast. *J. Bacteriol.* **136**:1174-1177.

24. DesLauriers, R., Becker, J. M., Steinfeld, A. and Naider, F., 1979. Steric effects of *cis-trans* isomerism on neighboring residues in Proline Oligopeptides. A ^{13}C-N.M.R. study of conformational heterogeneity in linear tripeptides. *Biopolymers* **18**:523-538.

25. Steinfeld, A. S., Naider, F. and Becker, J. M., 1979. A simple method for the selective acylation of cytidines and cytosines under mild reaction conditions. *J. Chem. Res. (S)* 129 and *J. Chem. Res. (M)* 1437-1450.

26. Rose, B., Becker, J. M. and Naider, F., 1979. Peptidase activities in *Saccharomyces cerevisiae*. *J. Bacteriol.* **139**:220-224.

27. Logan, D. A., Becker, J. M. and Naider, F., 1979. Peptide transport in *Candida albicans*. *J. Gen. Microbiol.* **114**:179-186.

28. Steinfeld, A. S., Naider, F. and Becker, J. M., 1979. Anticandidal activity of 5-fluorocytosine peptide conjugates. *J. Med. Chem.* **22**:1104-1109.

29. Naider, F., Sipzner, R., Steinfeld, A. S. and Becker, J. M., 1979. Separation of Protected Hydrophobic Oligopeptides by Normal Phase High Pressure Liquid Chromatography. *J. Chromatog.* **176**:264-269.

30. Hagler, A. T., Stern, G. S., Sharon, R., Becker, J. M. and Naider, F., 1979. Computer simulation of the conformational properties of oligopeptides. Comparison of theoretical methods and analysis of experimental results. *J. Amer. Chem. Soc.* **101**:6842-6852.

31. Merkel, G. J., Naider, F. and Becker, J. M., 1980. Amino acid uptake by *Saccharomyces cerevisiae* plasma membrane vesicles. *Biochim. Biophys. Acta* **595**:109-120.

32. Becker, J. M. and Naider, F., 1980. Transport and Utilization of Peptides in Yeast. pp. 257-279. In *Microorganisms and Nitrogen Sources* (J. Payne, ed.), Wiley Press, London.

33. Parker, D., Naider, F. and Becker, J. M., 1980. Separation of peptide transport and hydrolysis in trimethionone uptake by *Saccharomyces cerevisiae*. *J. Bacteriol.* **143**:1066-1069.

34. Ti, G. S., Steinfeld, A. S., Naider, F., Gulumoglu, A., Lewis, S. and Becker, J. M., 1980. Anticandidal activity of peptide-pyrimidine conjugates. *J. Med. Chem.* **23**:913-918.

35. Naider, F., Khan, S. A., Parker, D. D. and Becker, J. M., 1980. Inhibition of oligopeptide transport in *S. cerevisiae* by a peptide-poly (ethylene glycol) conjugate. *Biochem. Biophys. Res. Comm.* **95**:1187-1191.

36. Khan, S. A., Becker, J. M., Merkel, G. J. and Naider, F., 1981. Synthesis of the dodecapeptide α-mating factor of *Saccharomyces cerevisiae*. *Internat. J. Peptide Prot. Res.* **17**:219-230.

37. Haas, M. W., Becker, J. M. and Miller, R. V., 1981. Peptidase activity in the inner membrane of *Pseudomonas aeruginosa*. *Biochem. Biophys. Acta* **643**:256-260.

38. Shenbagamurthi, P., Smith, H. A., Becker, J. M. and Naider, F., 1982. Purification of Polyoxin D by reversed-phase higher-performance liquid chromatography. *J. Chromatog.* **245**:133-137.

39. Becker, J. M., Dunsmore, K. D., Steinfeld, A. S. and Naider, F., 1982. Photoinactivation of peptide transport in *Saccharomyces cerevisiae*. *Biochemistry* **21**:5967-5971.

40. Shenbagamurthi, P., Naider, F., Becker, J. M. and Steinfeld, A. S., 1983. Purification of synthetic analogs of yeast mating hormone by reversed phase chromatography. *J. Chromatog.* **256**:117-125.

41. Logan, D. A., Naider, F. and Becker, J. M., 1983. Peptidases of the Yeast and Filamentous Forms of *Candida albicans*. *Experimental Mycology* **7**:116-126.

42. Shenbagamurthi, P., Baffi, R., Khan, S. A., Lipke, P., Pousman, C., Becker, J. M. and Naider, F., 1983. Structure-Activity Relationships in the Dodecapeptide α-factor of *Saccharomyces cerevisiae*. *Biochemistry* **22**:1298-1304.

43. Naider, F., Huchital, M. and Becker, J. M., 1983. Mobility of oligopeptide on normal phase silica: Effect of positional isomerism. *Biopolymers* **22**:1401-1407.

44. Shenbagamurthi, P., Steinfeld, A. S., Khan, S. A., Becker, J. M., and Naider, F., 1983. Assignment of amide and aromatic protons of the Cha^2-dodecapeptide α-factor from *S. cerevisiae*. *Biopolymers* **22**:815-820.

45. Becker, J. M., Covert, N. L., Shenbagamurthi, P., and Naider, F., 1983. Polyoxin D inhibits growth of Zoopathogenic Fungi. *Antimicrob. Ag. Chemother.* **23**:926-929.

46. Shenbagamurthi, P., Smith, H., Becker, J. M., Steinfeld, A. S., and Naider, F., 1983. Design of anticandidal agents: Synthesis and biological properties of analogs of polyoxin L. *J. Med. Chem.* **26**:1518-1522.

47. Naider, F., Kundu, B., Shenbagamurthi, P., Baffi, R., Becker, J. M., and Pousman, C. 1983. N(ε)-acyl analogs of the α-factor from *Saccharomyces cerevisiae*. pp. 677-680 in *Peptides: Structure and function* (Hruby, V. J. and Rich, D. H., eds.), Pierce Chem. Co., Rockford, IL.

48. Naider, F., Shenbagamurthi, P., Steinfeld, A. S., Smith, H. A., Boney, C., and Becker, J. M., 1983. Synthesis and biological activity of tripepetidyl polyoxins as antifungal agents. *Antimicrob. Ag. Chemother.* **24**:787-796.

49. Baffi, R., Shenbagamurthi, P., Terrance, K., Becker, J. M., Naider, F. and Lipke, P., 1984. Different structure-function relationships for α-factor induced morphogenesis and agglutination in *Saccharomyces cerevisiae*. *J. Bacteriol.* **158**:1152-1156.

50. Naider, F., Steinfeld, A. S. and Becker, J. M., 1984. Separation of Oligopeptides by Normal Phase High Performance Liquid Chromatography. pp. 89-98. In *Handbook of HPLC* (W. S. Hancock, ed.), CRC Press.

51. Shenbagamurthi, P., Kundu, B., Becker, J. M. and Naider, F., 1985. Synthesis and biological activity of Nε-acyl Derivatives of a *Saccharomyces cerevisiae* Mating Pheromone. *Int. J. Peptide and Protein Res.* **25**:187-196.

52. Baffi, R. A., Becker, J. M., Lipke, P. N. and Naider, F., 1985. Structure-Activity Relationships in the dodecapeptide a-factor of *S. cerevisiae*: Position 6 analogs are poor inducers of agglutinability. *Biochemistry* **24**:3332-3337.

53. Shenbagamurthi, P., Kundu, B., Raths, S., Becker, J. M. and Naider, F., 1985. Biological Activity and Conformational Isomerism in Position 9 Analogs of the [DesTrp^{1},Cha^{3}]-α-Factor from *Saccharomyces cerevisiae*. *Biochemistry* **24**:7070-7076.

54. Smith, H. A., Shenbagamurthi, P., Naider, F., Kundu, B. and Becker, J. M., 1986. Hydrophobic polyoxins are resistant to intracellular degradation in *Candida albicans*. *Antimicrob. Ag. Chemother.* **29**:33-39.

55. Shenbagamurthi, P., Smith, H. A., Becker, J. M. and Naider, F., 1986. Synthesis and biological properties of chitin synthetase inhibitors resistant to cellular peptidases. *J. Med. Chem.* **29**:802-809.

56. Smith, H. A., Shenbagamurthi, P., Naider, F. and Becker, J. M., 1986. New synthetic polyoxin analogs for chitin synthesis inhibition. pp. 197-202. In *Chitin in Nature and Technology* (R. Muzzarelli, C. Jeuniaux, and G. W. Gooday, eds.). Plenum Press, N.Y.

57. Hilenski, L. L., Naider, F. and Becker, J. M., 1986. Polyoxin D inhibits colloidal gold-wheat germ agglutinin labelling of chitin in dimorphic forms of *Candida albicans*. *J. Gen. Microbiol.* **132**:1441-1451.

58. Naider, F., Shenbagamurthi, P., Broido, M. S., Hughes, L. A., Raths, S. and Becker, J. M., 1986. Circular dichroism, 2D-NMR, and biological activity of the dodecapeptide a-factor from *S. cerevisiae*. In *Peptides: Structure and Biological Activity*, Pierce Chemical Co. Rockford, IL.

59. Naider, F. and Becker, J. M., 1986. Structure-activity relationships of the *Saccharomyces cerevisiae* α-factor. *CRC Reviews of Biochemistry*. **21**:225-248.

60. Raths, S., Shenbagamurthi, P., Becker, J. M. and Naider, F., 1986. Biological activity of the Asn^{5}, Arg^{7}-Tridecapeptide encoded by *MFa2* of *Saccharomyces cerevisiae*. *J. Bacteriol.* **168**:1468-1471.

61. Grossman, A., Klein, H., Becker, J. M. and Naider, F., 1986. Yeast α-Factor and somatostatin enhance binding of [^{3}H]estradiol to proteins in rat pancreas and *Saccharomyces cerevisiae*. *J. Steriod Biochem.* **25**:299-304.

62. Krainer, J. E., Becker, J. M. and Naider, F., 1987. Chemo-chromatography for separation of Nikkomycins X and Z. *Anal. Biochem.* **160**:233-239.

63. Island, M., Naider, F. and Becker, J. M., 1987. Regulation of dipeptide transport in *S. cerevisiae* by micromolar amino acid concentrations. *J. Bacteriol.* **169**:2132-2136.

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