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**TIMOR BAASOV**

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**ABRIDGED CURRICULUM VITAE**

Date & place of birth: January 3, 1954, Karely, Georgia.  
Immigration to Israel: November 1974.  
Marital Status: Married to Tamar+2 children: Inon (1981) and Inbal (1989).  
Military Service: Israel Army, 1979 - 1981.  
Home Address: 22 Gilboa Street, Haifa, Israel.

**EDUCATION**

1981-1986 Ph.D. in Chemistry, The Weizmann Institute of Science, Israel.  
1977-1979 M.Sc. in Chemistry, Tel-Aviv University, Israel.  
1975-1977 B.Sc. in Chemistry, Tel-Aviv University, Israel.

**ACADEMIC APPOINTMENTS**

08-09.2017 Visiting Professor at the Dept. of Chemistry, The Scripps Research Institute, La Jolla, California. Summer Sabbatical stay with Prof. Chi-Huey Wong.  
11-12.2013 Visiting Professor at the Genomic Center, Academia Sinica, Taipei, Taiwan.  
June 2004- Professor, Schulich Faculty of Chemistry, Technion, Haifa, Israel.  
1999-2004 Associate Professor, Faculty of Chemistry, Technion, Haifa, Israel.  
3-8.1998 Visiting Scientist, Dept. of Chemistry, The Scripps Research Institute, La Jolla, California. Sabbatical stay with Prof. Chi-Huey Wong.  
1990-1998 Senior Lecturer, Faculty of Chemistry, Technion, Haifa, Israel.  
1988-1990 Lecturer, Faculty of Chemistry, Technion, Haifa, Israel.  
1986-1988 Postdoctoral research associate with Prof. J. R. Knowles. Dept. of Chemistry, Harvard University, Cambridge, MA, USA.

**ADMINISTRATIVE POSTS**

2018 International Advisory Board Member of the International Carbohydrate Symposium 2018 (ICS2018), Lisboa July 15-19, 2018.  
1.2016- Chair of Professional Committees for the evaluation of Technion's senior academic staff.  
5.2014-2015 Elected Member of the Technion Standing Committee for the Appointments of Senior Academic Staff and Tenure.  
7.2013-8.2015 President elected of The European Carbohydrate Organization (ECO).  
2014- Elected Member of the Inspection Committee of the Israel Chemical Society.  
2013- Member of Technion executive committee for the Honorary Degrees and Honorary Prizes.  
2013 Chairman and organizer of the international symposium EUROCARB17 that held for the first time in Israel, Tel-Aviv, July 7-11, 2013.  
2011-2016 Technion Senate member elected.  
2011 Member of International Scientific Advisory Board of EUROCARB16, Sorrento, Italy, July 2011.  
2010-2012 Member of Technion executive committee for the Research Prizes.  
2009-2012 Member of Technion executive committee for the promotion in the frame of KAMEA Program.  
2008-2009 Member of organizing committee, The 74<sup>th</sup> Meeting of the Israel Chemical Society; February 8-9, 2009; David Intercontinental Hotel, Tel Aviv.  
2008- National member elected at the executive committee of the International Carbohydrate Organization (ICO).

- 2007-2019 National member elected at the executive committee of the European Carbohydrate Organization (ECO).
- 2009-2010 Head of the organic and in-organic division, faculty of chemistry.
- 2006-2007 Head of the organic and in-organic division, faculty of chemistry.
- 2006-2007 Member of Technion's executive committee for honorary degrees.
- 2006-2008 Member of executive committee, The Israel Chemical Society.
- 2005-2007 Member of executive committee, Department of Biotechnology and Food Engineering.
- 2005- Chairman and organizer of an international 2-day symposium to celebrate the 80<sup>th</sup> birthday of Prof. Nathan Sharon. "Half a Century at the Carbohydrate-Protein Interaction." November 23-24, 2005, Weizmann Institute of Science.
- 2005- Member of organizing committee, The 4<sup>th</sup> Congress of the Israel Association for Medicinal Chemistry, April 14, Weizmann Institute of Science, Rehovot.
- 2004- Member of committee, Interdepartmental Program of Biotechnology.
- 2004-2008 Chairman of steering committee of "The Know-How Center for Sugars and Polysaccharides" at the Ben-Gurion University of the Negev.
- 2001-2002 Vice-Dean for academic affairs, and chairman of teaching committee for undergraduate and graduate studies, Department of Chemistry.
- 1999- Chairman and organizer of Wolf-Prize Symposium (May 1999, Technion).
- 1999-2002 Representative of the Department of Chemistry to the Senate of the Technion.
- 1999-2002 Chairman of committee responsible for the joint library of Departments of Chemistry and Biology.
- 1997- Adviser and member of teaching committee of "Molecular Biochemistry," the joint undergraduate path of the Departments of Chemistry and Biology.
- 1996-1999 Representative of Department of Chemistry at the Council of Department of Biology.
- 1996-1997 Member of organizing committee, 62nd annual conference of Israel Chemical Society (February 3-5, 1997, Technion).
- 1996-1997 Member of committee that created a new undergraduate studies path "Molecular Biochemistry"- the joint studies path between the Departments of Chemistry and Biology.
- 1996-1998 Member of teaching committee for undergraduate and graduate studies.
- 1989-1993 Organizer and Chair of "chemical demonstrations" given to junior high school students around the Haifa city.
- 1989-1991 Secretary of Faculty Council.
- 1990-1991 Organizer and Chair of weekly seminars (division of organic chemistry).
- 1991- Member of organizing committee, 57th annual conference of the Israel Chemical Society (February 12-13, 1992, Technion).

#### **MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL ASSOCIATIONS**

American Association for the Advancement of Science.  
American Chemical Society.  
The Israel Chemical Society.  
The Israel Society of Microbiology.  
Institute of Catalysis Science and Technology, Technion.

#### **HONORS**

- 1985 Chaim Weizmann Postdoctoral Fellowship (1986-1988).
- 1986 Dov-Elad award for excellence in Ph.D. studies, The Weizmann Institute of Science.
- 1989 The Henri Gutwirth annual award for the advancement of research in Technion.
- 1990-92 Colman-Cohen Academic Lectureship, Technion.
- 1991 The Henri Gutwirth annual award for the advancement of research in Technion.
- 1997 Yusefa and Leonid Olshwang Prize for academic excellence in chemistry, awarded by the Israel Academy of Sciences and Humanities.
- 2002 Excellence in Teaching, Technion (organic chemistry 2B).
- 2005 Hershel Rich-Technion Innovation Award for the research work on "Rational Design of Bifunctional Antibiotics: From Antibiotics Targeting Cystic Fibrosis to Effective Treatment of Anthrax Lethal Factor."
- 2005 Excellence in Teaching, Technion (organic chemistry 2C).

- 2005 Research Prize for the "Development of New Technology for the Defense from Terror", administered by the Center of Science and Technology, Technion.
- 2005 Dr. Irving and Jeanette Benveniste Chair in Life Sciences.
- 2006 Excellence in Teaching, Technion (organic chemistry 2C).
- 2006 Muriel and David Jacknow Award for excellence in teaching.
- 2007 Schulich Award for excellence in teaching.
- 2008 Hershel Rich-Technion Innovation Award for the research work on "Novel Aminoglycosides and Uses Thereof in the Treatment of Genetic Disorders."
- 2008 Excellence in Teaching, Technion (organic chemistry 2C).
- 2010 Hershel Rich-Technion Innovation Award for the research work on "Hybrid Antibiotics – A Novel Approach to Delay the Resistance Development by Bacteria".
- 2010 Excellence in Teaching, Technion (organic chemistry 2C).
- 2011 National Science Council of Taiwan Lectureship Award.
- 2012 Elsevier – *Bioorganic and Medicinal Chemistry* Top 25 cited Author 2010 to 2011.
- 2013 Visiting Professorship at the Genomic Center, Academia Sinica, Taipei, Taiwan.
- 2014 Excellence in Teaching, Technion (organic chemistry 2C).
- 2015 Schulich Prize for Excellence in Teaching.
- 2015 Visiting Professorship at the Genomic Center, Academia Sinica, Taipei, Taiwan.
- 2016 2016 ICS-ICL Prize for Technological Innovation.
- 2020 2020 NCK Prize for Outstanding Medicinal Chemist.

### TEACHING EXPERIENCE

#### Department of Chemistry, Tel-Aviv University:

1977-1979 Teaching Assistant: Organic chemistry frontal and laboratory courses.

#### Department of Chemistry, Technion. Undergraduate (U) and Graduate (G) courses:

- 1989-1990 "General Chemistry." Chemistry 1 and Chemistry 11 (U).
- 1991- "Organic Chemistry." Organic Chemistry 1B, 1C and 2B (U).
- 1990- "Organic Chemistry Laboratory." OC Lab 1C, 1B, 1M (U).
- 1990-2002 "Enzymatic Reaction Mechanisms." Biennial course (U/G).
- 1998- "Carbohydrate Chemistry." The Module of the Advanced Organic Chemistry course (U/G).
- 2001- "Carbohydrate Chemistry and Biochemistry." (U/G)
- 2007/8- "Antibiotics Research – Past, Present and Future"

### GRADUATE STUDENTS

#### Completed their studies

1. Jakob Abla, M.Sc., 1991. Anomeric Specificity of KDO8P Phosphatase and KDO8P Synthase.
2. Berkovich Ronit, M.Sc., 1993. Stereochemistry of KDO8P Synthase-Catalyzed Reaction.
3. Zchuth Rachel, M.Sc., 1994. Purification of KDO8P Synthase From the Overexpression E. coli Strain and Mechanistic Study of the Enzyme-Catalyzed Reaction.
4. Kohen Amnon, M.Sc., 1990. Mechanistic Studies of KDO8P Synthase.
5. Kohen Amnon, Ph.D., 1994. Mechanistic Studies of the Reaction Catalyzed by the Enzyme KDO8P Synthase. (**Miriam and Aaron Gutwirth Award, 1991**, and **Wolf foundation Award, 1992**, for excellence during graduate studies).
6. Sheffer-Dee-Noor Shani, Ph.D., 1994. Synthesis and Examination of the New Analogues of Phosphoenolpyruvate and of the Putative Reaction Intermediate as a Tool for the Mechanistic Studies of KDO8P Synthase.
7. Levi Dorit, M.Sc., 1996. Catalytic Mechanism of KDO8P Synthase. Synthesis and Examination of the Suspected Intermediate Analogues.
8. Tkach Rachel, M.Sc., 1997. Synthesis and Examination of the New Amino Analogue of Arabinose-5-Phosphate as a Tool for the Mechanistic Studies of KDO8P Synthase.
9. Shoucheng Du, Ph.D., 1998. Catalytic Mechanism of KDO8P Synthase. Synthesis and Examination of the Suspected Intermediate Analogues.
10. Benenson Yaakov, M.Sc., 1999. Do Polysaccharides Bearing Catalytic Activity Exist in Nature? Researches to Discover Such Unique Macromolecular Structures. (**Miriam and**

- Aaron Gutwirth Award, 1997, and Wolf foundation Award, 1998**, for excellence during graduate studies).
11. Tsipori Hana, M.Sc., 1999. Catalytic Mechanism of KDO8P Synthase: Design of Novel Antibacterial Drugs. (**Miriam and Aaron Gutwirth Award, 1998**, for excellence during graduate studies).
  12. Solomon Dmitry, M.Sc., 1999. Towards Carbohydrate-Based catalytic Systems.
  13. Solomon Dmitry, Ph.D., 2002. Rational Design of a Pentasaccharide with GTPase Activity. (**Miriam and Aaron Gutwirth Award, 2001**, for excellence during graduate studies).
  14. Rabkin Emilia, M.Sc., 2002. Structure-Function Studies of KDO8P Synthase.
  15. Sandlers Yana, M.Sc., 2002. Catalytic Mechanism of KDO8P Synthase. Synthesis and Examination of the Proposed Intermediate Analogues.
  16. Dovgolevsky Ekaterina, M.Sc., 2002. Catalytic Mechanism of KDO8P Synthase. Synthesis and Examination of the Proposed Intermediate Analogues. (**With Honor. Miriam and Aaron Gutwirth Award, 2002**, for excellence during graduate studies).
  17. Fridman Micha, M. Sc., 2001. Design, Synthesis, and Examination of Novel Oligosaccharide-Based Catalysts. (**Miriam and Aaron Gutwirth Award**, for excellence during graduate studies).
  18. Gershon Orit, M.Sc. 2002. Isolation, Cloning, and Purification of Thermophilic Kdo8P Synthase. (**Interdepartmental Biotechnology Program**).
  19. Fridman Micha, Ph.D. February 2005 (direct path). Design, Synthesis, and Examination of Bifunctional Aminoglycoside Antibiotics. (**Miriam and Aaron Gutwirth Award, 2002, Wolf foundation Award, 2003, Israel Chemical Society Award, 2005**, for excellence during graduate studies, and **Rothschild Postdoctoral Fellowship, 2005**).
  20. Mariana Hainrichson, M.Sc. December 2005. Structure and function studies of synthetic derivatives of aminoglycosides with aminoglycosides-modifying enzymes. (**Leonard and Diane Sherman Interdisciplinary Fellowship for Technion graduate students, awarded at 2005, Miriam and Aaron Gutwirth Award, 2006, Interdepartmental Biotechnology Program**).
  21. Pokrovskaya Varvara, M.Sc. 2006. Design, synthesis and evaluation of aminoglycosides derivatives as potential new antibiotics (**Banin foundation prize for excellence in research**).
  22. Igor Nudelman, M.Sc. 2006. Redesign of aminoglycosides for treatment human genetic diseases. (**Leonard and Diane Sherman Interdisciplinary Fellowship for Technion graduate students, 2006**).
  23. Lilach Chen, M.Sc. 2006. Structure-toxicity relationship of aminoglycoside antibiotics.
  24. Avi Menasher, M.Sc. 2007. Catalytic Mechanism of KDO8P Synthase: Design of Novel Antibacterial Drugs. (**Interdepartmental Biotechnology Program**).
  25. Tal Assaf, M. Sc. 2007. Biochemical Characterization of aminoglycoside modifying enzyme APH(2'')-AAC(6'') with new synthetic derivatives of neomycin B. (**Interdepartmental Biotechnology Program**).
  26. Gershon-Yaniv Orit, Ph.D. 2008. Resistance of *Pseudomonas aeruginosa* to aminoglycosides: regulation studies of APH(3'')IIB enzyme and MexXY efflux pump. (**Interdepartmental Biotechnology Program**).
  27. Helena Katz, M. Sc. 2008. Using liposomes to enhance antibacterial activity of novel antibiotics. (**Interdepartmental Biotechnology Program**).
  28. Marina Cherniavsky, M. Sc. 2008. Development of Reporter System for High Throuput Screening of Synthetic Libraries for Evaluation of in vitro Stop Codon Readthrough Activity. (**Leonard and Diane Sherman Interdisciplinary Fellowship for Technion graduate students, awarded at 2007, Miriam and Aaron Gutwirth Award, 2008. Interdepartmental Biotechnology Program**).
  29. Mariana Hainrichson, Ph.D. 2009 (direct path). Structure and biological functions studies of synthetic derivatives of aminoglycosides with aminoglycosides-modifying enzymes. (**Sylvia and David Fine Fellowship for Doctoral Students, 2007; Wolf foundation Award, 2008; Interdepartmental Biotechnology Program**).
  30. Lilach Chen, Ph.D. 2009 (direct path). Design, Synthesis, and Examination of Bifunctional Aminoglycoside Antibiotics.
  31. Yifat Berkov, M. Sc. 2009. Rational design and synthesis of novel derivatives of aminoglycosides as stop codon readthrough inducers (**Curt & John M. Rychwalski Award, 2009**).
  32. Varvara Pokrovskaya, Ph.D. 2010 (direct path). Hybrid antibiotics: a novel approach to delay development of bacterial resistance. (**Banin Foundation Prize, 2004; Hershel Rich-Technion Innovation Award 2009-2010**).

33. Igor Nudelman, Ph.D. 2010 (direct path). Redesign of aminoglycosides for treatment human genetic diseases. (**Miriam and Aaron Gutwirth Award, 2008; Jacobs Fellowship 2009**).
34. Dana Glikin, M. Sc. 2010. Development of Reporter System for Screening of Synthetic Libraries for in vitro and ex vivo Evaluation of Stop Codon Readthrough Activity. (**Miriam and Aaron Gutwirth Award, 2010. Interdepartmental Biotechnology Program**).
35. Einav Taib-Fligelman, M.Sc. April 2012. Redesign of aminoglycosides for improved antibacterial performance.
36. Katya Shapira, M. Sc. December 2012. Development of Reporter System for Screening of Synthetic Libraries for in vitro and ex vivo Evaluation of Stop Codon Readthrough Activity (**Interdepartmental Biotechnology Program**).
37. Dana Atia-Glikin, Ph.D. (direct path) December 2013. Structure-Activity-Toxicity relationship study of novel semi-synthetic aminoglycosides: Development of new drug for the treatment of Genetic Diseases. (**Miriam and Aaron Gutwirth Award, 2010. Interdepartmental Biotechnology Program**).
38. Moran Shalev, Ph.D. August 2013. Structural studies of aminoglycoside antibiotics with rRNA (**Shulich Award, 2012**).
39. Eli Shulman, Ph.D. (direct path) 2014. Exploration of the mechanism of aminoglycoside mediated ototoxicity (**Banin Foundation Prize, 2010**).
40. Yarden Degani, M. Sc. 2014. Redesign of aminoglycosides for the treatment of genetic diseases.
41. Boris Smolkin, Ph.D. (direct path) 2015. Towards Catalytic Antibiotics. (**Best Poster Award-first place, EUROCARB18 symposium, Moscow August 2-7, 2015.**)
42. Michal Shavit, Ph.D. 2015. Design of novel hybrid antibiotics.
43. Alina Vilensky, M. Sc. 2015. Towards Catalytic Antibiotics.
44. Vera kravinskiy, M. Sc. 2015. Prodrugs for the treatment of Genetic Diseases.
45. Moshe Nissim Goldmeier, MSc 2017. Hybrid antibiotics research.
46. Bat-hen Zalman, MSc September 2017. Hybrid antibiotics research.

#### In progress

47. Alina Vilensky, PhD student from October 2015. Towards Catalytic Antibiotics.
48. Vera kravinskiy, PhD student from October 2015. Redesign of aminoglycosides with reduced toxicity for the treatment of genetic diseases.
49. Moshe Nissim Goldmeier, PhD student (direct path) from May 2017. Towards Catalytic Antibiotics.
50. Ka-Shu Fung, PhD student from October 2016. New perspectives in antibiotics research.
51. Sofya Sudin, MSc student from April 2017. New perspectives in antibiotics research.

#### **POST-DOCTORAL FELLOWS AND LABORATORY ASSISTANTS**

##### Completed their projects

1. Dr. Francis Wallace D'Souza, Post-doctoral fellow (September 1995-October 1996). Title of project: "Synthesis and Examination of the Proposed Intermediates in the KDO8P-Synthase-Catalyzed Reaction."
2. Dr. Ambar Kumar Choudhury, Post-doctoral fellow (October 1997-November 1998). Title of project: "Preparation of Oligosaccharide Libraries Using Solid Phase Synthetic Approaches."
3. Dr. Sara Gropper, Post-doctoral fellow (October 1997-November 1998). Title of project: "Preparation of Site-Directed Mutants of KDO8P Synthase."
4. Dr. Jean-way Zhang, Post-doctoral fellow (October 1999-November 2000). Title of project: "Self-Replication Systems Based on Carbohydrates"
5. Dr. Smadar Shulami, post-doctoral fellow, during October 2000-2003. Title of project: "Active-site mutants of KDO8P synthase from thermophilic bacterium *Aquifex pyrophilus*."
6. Dr. Micha Fridman, post-doctoral fellow during March 2005-August 2005. Title of project: "Synthesis of proposed intermediate in KDO8P-synthase-catalyzed reaction intermediate."
7. Dr. Dalia Shallom, post-doctoral fellow October 2004-January 2007. Title of project: "Rational design of novel antibiotics by using computer-aided docking experiments."
8. Dr. Mariana Hainrichson, post-doctoral fellow September 2009-February 2010. Title of project: "Insights into the mechanism of aminoglycosides induced toxicity".

9. Dr. Jeyakumar Kandasamy, **Schulich Postdoctoral Fellow** since November 2008-October 2011. Title of project: "Design, Synthesis and Biological Evaluation of Small Molecules as Potential Drugs for the Treatment of Genetic Diseases."
10. Dr. Varvara Pokrovskaya. Title of project: Hybrid antibiotics: a novel approach to delay development of bacterial resistance.
11. Dr. Michal Shavit. January-July 2015. Title of project: Assays development for the detection of catalytic RNase activity of synthetic molecules.
12. Dr. Sabbavarapu/Narayana Murthy; Postdoctoral Research Fellow from April 2013-June 2016. New concepts in design and evaluation of aminoglycoside derivatives as potential treatment option of genetic diseases.
13. Dr. Abragam Joseph; Postdoctoral Research Fellow from April 2015 – October 2018.

#### In progress

14. Dr. Valery Belakhov, senior research scientist, "KAMEA program" since May 1991.
15. Dr. Surabhi Gupta, Silvia Noiman Postdoctoral Research Fellow since August 2019.

### **RESEARCH GRANTS**

#### Approved for support

1. **T. Baasov** 1990-1993  
Grant Title: "Mechanistic Studies on KDO-8-Phosphate Synthetase and KDO-8-Phosphate Phosphatase: Design of the Specific Antibacterial Drugs." Sponsored by the Basic Research Foundation (**BRF**), Administered by The Israel Academy Of Sciences And Humanities. Grant no: 485/90-2 (060-186). 1990-1993: NIS 144,000.
2. **T. Baasov** and J.R. Knowles 1991-1994  
Grant Title: "Mechanistic Studies on KDO-8-Phosphate Synthase". Sponsored by the United States-Israel Binational Science Foundation (**BSF**). Grant no: 90-00478 (060-204). 1991-1994: \$123,000.
3. **T. Baasov** and V. Belakhov 1991-1995  
Grant Title: "Design of the Specific Antibacterial Agents Against Gram-Negative Bacteria." Sponsored by the Ministry Of Science And Technology. Grant no: 3611-1-91 (060-217). 1991-1995: NIS 168,000.
4. **T. Baasov** and K. S. Anderson 1995-1998  
Grant Title: "Catalytic Mechanism of KDO8P Synthase: Design of Novel Antibacterial Drugs." Sponsored by the United States-Israel Binational Science Foundation (**BSF**). Grant no: 94-00371 (060-336). 1995-1998: \$117,000.
5. Y. Shoham, **T. Baasov** and G. Shoham 1996-1998  
Grant Title: "Rational Design of Thermostable Hemicellulases for Enhanced Stability and Novel Applications". Sponsored by The Ministry of Science and the Arts as an "Associated Scientific Project" for the Development of the Fundamental Technology Center for Protein Purification and Sequencing. Grant no: 5932/95 (080-466). 1996-1998: NIS 210,000 (out of NIS 630,000 total grant).
6. **T. Baasov** 1997- 2000  
Grant Title: "Do Polysaccharides Bearing Catalytic Activity Exist in Nature? Research to Discover Such Unique Macromolecular Structures." Sponsored by the Israel Science Foundation (ISF), Administered by The Israel Academy Of Sciences And Humanities. Grant no: 204-97-1 (060-330). 1997- 2000: NIS 459,000.
7. **T. Baasov**, K.S. Anderson and J. Friedman 1998-2001  
Grant Title: "Structure-Function Studies of KDO8P Synthase: Design of Novel Antibiotics." Sponsored by the United States-Israel Binational Science Foundation (**BSF**). Grant no: 97-00356 (060-464). 1998-2001: \$105,000.
8. **T. Baasov** 2000-2003  
Grant Title: "Towards Carbohydrate-Based Catalytic Systems: An Alternative View on the Origin of Life." Sponsored by the Israel Science Foundation (**ISF**), Administered by The Israel Academy Of Sciences And Humanities. Grant no: 214-00-1 (060-550). 2000-2003: NIS 663,000.
9. **T. Baasov**, Y. Shoham, A. Schmidt, N. Adir 2002-2003

- Grant Title: "Structure-Function Studies of KDO8P Synthase by Solid-State REDOR NMR and X-Ray Crystallography: Rational Design of Novel Antibacterial Drugs." Sponsored by the Technion V.P.R. FUND FOR THE PROMOTION OF RESEARCH. Grant no: 060-624. 2002-2003: \$15,000.
10. **T. Baasov** and K. S. Anderson 2003-2007  
Grant Title: "Structure-Function Studies of KDO8P Synthase: Design of Novel Antibiotics." Sponsored by the United States-Israel Binational Science Foundation (**BSF**). Grant no: 2002/126 (060-643). 2003-2007: \$140,000.
  11. Y. Shoham, D. Schomberg, **T. Baasov** and G. Shoham 2003-2006  
Grant title: "Structure-Function Studies of Carbohydrate-Active Enzymes: The Design of Novel Functionalities." Sponsored by the German Israeli Foundation (**GIF**). Grant no: I-743-119.9/2002 (080-632). 2003-2006: Euro 118,000 (out of Euro 475,000 total grant).
  12. **T. Baasov** 2003, 2004-2007  
Grant title: "Towards Bifunctional Antibiotics Targeting rRNA and Resistance-Causing Enzymes." Sponsored by the Israel Science Foundation (**ISF**), Administered by The Israel Academy Of Sciences And Humanities. Grant no: 2003-025-1. 2004-2007: NIS 663,000.
  13. **T. Baasov**, S. Yaron and L. Bentur 2004-2005  
Grant title: "Towards Bifunctional Antibiotics Targeting Cystic Fibrosis." Sponsored by the Technion V.P.R. Fund for the Promoution of Research. L.L. Richmond Research Fund. Grant no: 2004118: \$12,000. (2004-2005).
  14. **T. Baasov** and T. Ben-Yosef 2006-2007  
Grant title: "Rational Design of Aminoglycosides to Treat Human Genetic Diseases" Sponsored by the Mizutani Foundation for Glycoscience, Japan. Grant no: 1005904 (2006977): ¥ 6,000,000. (4.2006-3.2007).
  15. **T. Baasov** (P.I.) and S. Yaron (C.I.) 2005-2006  
Grant title: "Development of Novel Antibiotics with Dual Effect Against Anthrax: Antibacterial Activity against *Bacillus anthracis* and Inhibition of Anthrax Lethal Factor" Sponsored by the DVORA Foundation, administered by the Center of Science and Technology of Defence, Technion. Grant no: 2005987: \$35,000. (2005-2006).
  16. **T. Baasov** and T. Ben-Yosef 2006-2007  
Grant title: "Rational Design of Aminoglycosides to Treat Human Genetic Diseases" Sponsored by the Technion V.P.R. Fund. Grant no: 2007401: \$10,000. (6/2006-12/2007).
  17. **T. Baasov** (P.I.) and S. Yaron (C.I.) 2007-2011  
Grant title: "Towards Bifunctional Antibiotics Targeting rRNA and Resistance-Causing Enzymes" Sponsored by the Israel Science Foundation (**ISF**), Administered by The Israel Academy Of Sciences And Humanities. Grant no: 515/07 (1006974): INS 237,000 per year. The grant proved for four years 10/2007-9/2011).
  18. **T. Baasov** (P.I.) and Daniel S Pilch (P.I.) 2007-2011  
Grant title: "Redesign of Aminoglycosides to Treat Human Genetic Diseases" Sponsored by the United States-Israel Binational Science Foundation (**BSF**). Grant no: 2006301 (1006973): Total four years budget \$151,000 (\$105,000 for the Israeli PI and \$46,000 for the US PI). (9/2007-8/20011). The total budget for the first year \$43,000.
  19. **T. Baasov** and T. Ben-Yosef 2007-2008  
Grant title: "Development of Small Molecule Drug for Treatment of Human Genetic Diseases Caused by Nonsense Mutations " Sponsored by the Horowitz Funds – the funds for the development of Technion's knowledge for commercialization. Grant no: 2009155: \$118,000. (06/2007-05/2008).
  20. **T. Baasov** and T. Ben-Yosef 2008-2009  
Grant title: "Development of Small Molecule Drug for Treatment of Human Genetic Diseases Caused by Nonsense Mutations"; Sponsored by the Horowitz Funds – the funds for the development of Technion's knowledge for commercialization. Grant no: 2010987: \$100,000. (08/2008-07/2009).
  21. **T. Baasov** 09/2009-12/2010  
Grant title: "Development of Small Molecule Drug for Treatment of Cystic Fibrosis and Other Diseases Caused by Nonsense Mutations". Ministry of Industry, Trade and Labor, MAGNET program, **NOFAR** with TEVA Pharmaceutical Comapany Ltd., Grant Reference No.: 880010 (PI: T.Baasov). \$65,000 Total Direct Costs for the Period of support.
  22. **T. Baasov** 09/2009-12/2010  
Grant title: "Development of Small Molecule Drug for Treatment of Cystic Fibrosis and Other Diseases Caused by Nonsense Mutations". **Mitchell** Entrepreneurial Program at the

- Technion; Grant Reference No.: 907023/2012386 (PI: T.Baasov); \$31,212 Annual Direct Costs.
23. **T. Baasov** (PI), E. Gak (PI) and P. Huppke (PI) 01/2011-12/2014  
Grant title: "Potential Treatment of Rett Syndrome Caused by Nonsense Mutations". The German Israeli Foundation (**GIF**). The German PI Prof. Peter Huppke (Zentrum Kinderheilkunde und Jugendmedizin, Georg-August-Universität, Göttingen, Germany). The part of T.Baasov PI Budget \$28,000 Annual Direct Costs.
  24. **T. Baasov** (PI), D. Bedwell (Co-PI) and J. Schacht (Co-PI) 04/2011-03/2015  
Grant title: "Tuning aminoglycosides for treatment of genetic diseases". **NIH** grant application RO1-new investigator grant. \$340,205/annual for four years, for the period 01.04.2011-31.03.2015.
  25. **T. Baasov** 05/2013-04/2014  
Grant title: : "Development of Small Molecule Drug for Treatment of Cystic Fibrosis and Other Diseases Caused by Nonsense Mutations". The Fund For Applied Research at The Technion. \$68,000.
  26. **T. Baasov** 10/2014-9/2018  
Grant title: "Towards Catalytic Antibiotics" Sponsored by the Israel Science Foundation (**ISF**), Administered by The Israel Academy Of Sciences And Humanities. Grant no: 1845/14: INS 310,000 per year. The grant proved for four years 10/2014-9/2018).
  27. **T. Baasov** (PIs together with Michael Majjler-BGU and Micha Fridman-TAU)  
Grant title: "Combined Approaches for Synergistic Targeting of Bacterial Infections" sponsored by Ministry of Science, Technology and Space, State of Israel for 3 years. 15.12.2015-14.12.2018; estimated annual budget of 216,200 NIS.
  28. **T. Baasov** and Jochen Schacht (both PIs) 07/2016-06/2017  
Grant title: Design, synthesis and evaluation of nonototoxic aminoglycosides for treatment of genetic diseases caused by nonsense mutations. Sponsored by Michigan-Israel Partnership for Research and Education. Grant no: 2023167, \$50,000 (half to each PIs).
  29. **T. Baasov** (PI): 08/2013-4/2020  
Grant title: "Development of Small Molecule Drug for treatment of Genetic Diseases". Sponsored by Eloxx Pharmaceuticals Ltd Research Grant (grant No: 2019230); \$ 85,000 for the first year; \$ 75,000 second year; \$ 40,000 third year. \$ 50,000 fourth and fifth years.

Submitted and pending for support

30. **T. Baasov**  
Grant title: "Redesign of Existing Antibiotics to Catalytically Disable Their Targets –Towards Catalytic Antibiotics" Submitted to IIA-Kamin Grant. July 2019.
31. **T. Baasov**  
Grant title: "Towards Catalytic Antibiotics"; submitted for support to **ISF** (October 2019).
32. **T. Baasov** (PI) and **Wenjian Tang** (PI, Anhui Medical University, China).  
Grant title: "Catalytic Fluoroquinolones as a Strategy against Development of Antibiotic Resistance"; submitted for support to Joint **NSFC-ISF** (China-Israel) Research Grant (January 16, 2020).
- 33.

**EQUIPMENT GRANTS**

1. **T. Baasov**. The Basic Research Foundation, Israel Academy of Science and the Technion. A special support for the Startup of Young Faculties. FPLC system. \$40,000. (1990).
2. **T. Baasov**. The Israel Science Foundation (**ISF**). Grant no: 214-00-1 (060-550). HPLC System. 2001: \$30,000.
3. **T. Baasov**, Z. Gross and I. Marek "High Resolution Triple-Resonance 500 MHz Spectrometer." Sponsored by the Israel Science Foundation (**ISF**) Administered by The Israel



- Academy Of Sciences And Humanities. Grant no: 9103/01. A special fund for the purchase of NMR equipment for the Faculty of Chemistry. \$400,000 (2001-2002).
4. Y. Shoham, **T. Baasov**, and C. Dozoretz "*Stopped-Flow Absorbance, Fluorescence and Circular Dichroism Spectrometer.*" Grant no: 1481-2004. Sponsored by the Israel Science Foundation (**ISF**). Total equipment cost \$ 350,000, ISF granted \$70,000. (2004).
  5. **T. Baasov**, Z. Gross and M. Gandelman "*High resolution 600 MHz NMR System*". Sponsored by the Israel Science Foundation (**ISF**) under the framework of Converging Technologies. Grant no: 1798/07. Total amount: \$ 725,000 (2007).

#### Submitted

T. Baasov, I. Marek and C. Diesendruck - "*High resolution NMR System*". Submitted to VATAT February 2019.

#### INVITED LECTURES AT INTERNATIONAL AND NATIONAL CONFERENCES

1. **Timor Baasov**, Abla Jakob and Amnon Kohen. "Mechanistic Studies on the Enzymes of Lipopolysaccharide Biosynthesis." The Annual Meeting of the Israel Chemical Society. The Hebrew University, Jerusalem, February 11-12, 1991.
2. **Timor Baasov**. Mechanistic Studies on the Enzymes of Lipopolysaccharide Biosynthesis: KDO8P Synthase and KDO8P Phosphatase. 1<sup>st</sup> Joint Symposium of The Royal Society of Chemistry and the Israel Chemical Society on "STRUCTURE AND REACTIVITY IN ORGANIC AND BIOORGANIC CHEMISTRY", University of Durham, UK, 2-4 September, 1992.
3. **Timor Baasov**. Insight into the Catalytic Mechanism of KDO8P Synthase - A Key Enzyme in the Biosynthesis of Lipopolysaccharides. The 58<sup>th</sup> Annual Meeting of the Israel Chemical Society. Bar-Ilan University, Ramat-Gan, February 17-18, 1993.
4. **Timor Baasov**. Antibiotic Resistance and Design of Novel Antibacterial Drugs. The Memorial Meeting of Professor Dan Becker. Technion, Department of Chemistry, 20 October, 1994.
5. **T. Baasov**, A. Kohen, S. Sheffer-Dee-Noor and S. Du. Towards the Mechanism-Based Inhibitors of Kdo8P Synthase - A Key Enzyme in the Biosynthesis of Lipopolysaccharides. The 61<sup>st</sup> Annual Meeting of the Israel Chemical Society. The Hebrew University of Jerusalem, Jerusalem, February 13-14, 1996.
6. **T. Baasov**. Towards Mechanism-Based Inhibitors of Kdo8P Synthase - A Key Enzyme in the Biosynthesis of Lipopolysaccharides. The Symposium honoring the laureates of the 1995-96 Wolf-Prize in Chemistry: Prof. Gilbert Stork and Prof. Samuel Danishefsky. Technion, March 26, 1996.
7. **T. Baasov**. Recent Insights into the Catalytic Mechanism of KDO8P Synthase – A Key Enzyme in the Biosynthesis of Lipopolysaccharides. 15<sup>th</sup> Umbrella Symposium on Biotechnology, Technion and Aachen University of Technology Research Center Julich. Whizin Lecture Hall, Technion, November 2-4, 1998.
8. **T. Baasov** and Yaakov Benenson. Towards Carbohydrate-Based Catalytic Systems: Concepts and Preliminary Results. The 64<sup>th</sup> Annual Meeting of the Israel Chemical Society. Bar-Ilan University, March 16-17, 1999.
9. **T. Baasov**. Novel Applications of Oligosaccharides as Possible Catalysts. The Symposium honoring the laureate of 1999 Wolf-Prize in Chemistry, Raymond U. Lemieux, Dept. of Chemistry, Technion, May 3, 1999. (**Organizer and Chairman**).
10. **T. Baasov**, Y. Benenson and D. Solomon. Towards Carbohydrate-Based Catalytic Systems: An Alternative View on the Origin of Life. 6<sup>th</sup> Conference of the International Endotoxin Society, Institute of Pasteur, Paris, France, August 24-27, 2000.
11. **T. Baasov**, Y. Benenson and D. Solomon. Towards Carbohydrate-Based Catalytic Systems: An Alternative View on the Origin of Life. 20<sup>th</sup> International Carbohydrate Symposium, Hamburg, Germany, August 27-September 1, 2000.
12. **T. Baasov**, S. Du, H. Tsipori and V. Belakhov. Towards the Development of Novel Antibiotics Acting at the Lipopolysaccharide Biosynthesis. 1<sup>st</sup> German-Polish-Russian Meeting on Bacterial Carbohydrates. Research Center Borstel, Borstel, Germany, September 3-5, 2000.
13. **T. Baasov**. Towards Carbohydrate-Based Catalytic Systems: An Alternative view on the Origin of Life. Special Symposium Celebrating the 75<sup>th</sup> Birthday of Prof. Yehuda Mazur. Schmidt lecture hall, The Weizmann Institute of Science, September 21, 2000.

14. **T. Baasov.** Towards Carbohydrate-Based Catalytic Systems: An Alternative view on the Origin of Life. International Conference "2000-The Era of Biotechnology," October 24-27, 2000, Beer-Sheva, Israel.
15. **T. Baasov,** D. Solomon, M. Fridman, and J. Zhang, A Pentasaccharide Enzyme – Glycozyme with GTPase Activity. 11<sup>th</sup> European Carbohydrate Symposium, September 2-7, 2001, Lisboa, Portugal.
16. **T. Baasov.** Structural and Mechanistic Investigation of KDO8P Synthase by Solid-State REDOR NMR and X-Ray Crystallography. 67<sup>th</sup> Annual meeting of The Israel Chemical Society, January 29-30, 2002, Renaissance Hotel, Jerusalem.
17. **T. Baasov.** Towards a New Class of Synthetic Antibacterials Acting on Lipopolysaccharide Biosynthesis. The 1<sup>st</sup> meeting of the Israel Association for Medicinal Chemistry. Ma'ale Hachamisha Hotel, Jerusalem, March 18, 2002.
18. **T. Baasov.** Structural and Mechanistic Investigation of KDO8P Synthase by Solid-State REDOR NMR and X-Ray Crystallography. 10<sup>th</sup> Bratislava Symposium on Saccharides, Bratislava, Slovakia, September 1-5, 2002.
19. **T. Baasov.** Structural and Mechanistic Investigation of KDO8P Synthase by Solid-State REDOR NMR, X-Ray Crystallography, and ESI-TOF MS. 12<sup>th</sup> European Carbohydrate Symposium. Grenoble, France, July 6-11, 2003.
20. **T. Baasov.** Towards Bifunctional Antibiotics Targeting Cystic Fibrosis. The 69<sup>th</sup> Meeting of the Israel Chemical Society, David Inter-Continental Hotel, Tel-Aviv, February 2-3, 2004.
21. **T. Baasov.** Chemical club with a one-two punch: Tailored antibiotics attack anthrax pathogen in two places simultaneously. The 4<sup>th</sup> Congress of the Israel Association for Medicinal Chemistry, Weizmann Institute of Science, Rehovot. April 14, **2005**.
22. **T. Baasov.** Dual Effect of Synthetic Aminoglycosides: Antibacterial Activity Against *Bacillus anthracis* and Inhibition of Anthrax Lethal Factor. 13<sup>th</sup> European Carbohydrate Symposium, Bratislava, August 21-26, **2005**.
23. **T. Baasov.** Redesign of Aminoglycoside Antibiotics: From Effective Treatment of Anthrax to Antibiotics Targeting Cystic Fibrosis. 2005 WHTS' 3<sup>rd</sup> Congress of International Drug Discovery Science and Technology, Shanghai, Worldfield Convention Hotel, China, 27-30 September, **2005**.
24. **T. Baasov.** Oligosaccharides in Action: Making Sense from Nonsense. The Future of Applied Glycobiology: A Satellite Meeting in Memory of Prof. Shimona Geresh, Ben-Gurion University, Beer-Sheva, November 22, **2005**.
25. **T. Baasov.** Redesign of Aminoglycoside Antibiotics: From Effective Treatment of Anthrax to Antibiotics Targeting Cystic Fibrosis. PacificChem 2005, International Congress, Honolulu, December 15-20, **2005**.
26. **T. Baasov.** New Paromamine-Based Aminoglycosides as Potential Treatment of Human Genetic Diseases. 23<sup>rd</sup> International Carbohydrate Symposium; Whistler Conference Centre, Whistler, BC Canada; July 23-28, **2006**.
27. **T. Baasov.** Redesign of Aminoglycosides for Treatment of Human Genetic Diseases Caused by Nonsense Stop Mutations. 233<sup>rd</sup> American Chemical Society Meeting, Chicago, Illinois, March 25-29, **2007**.
28. **T. Baasov.** Redesign of Aminoglycosides for Treatment of Human Genetic Diseases Caused by Nonsense Stop Mutations. ILSI-BIOMED-2007, Tel Aviv, June 5-7, **2007**.
29. **T. Baasov.** Redesign of Aminoglycosides for Treatment of Human Genetic Diseases Caused by Nonsense Stop Mutations. Annual Meeting of Israel Medicinal Chemistry, Weizmann Institute of Science, Rehovot, March 13, **2007**.
30. **T. Baasov.** Redesign of Aminoglycosides: To Fix Defect Genes with Small Molecules. Chemistry and Medicine: The Modern Journey from the Chemistry Bench to the Clinic. Technion, November 23, **2008**.
31. **T. Baasov.** To Teach Old Drugs New Tricks: Redesign of Aminoglycosides for Better Antibiotic Performance and as Potential New Drugs to Treat Genetic Diseases. Lecture in Memory of the late Professor Yehuda Mazur. The Weizmann Institute of Science, May 14, **2009**.
32. **T. Baasov.** Redesign of Aminoglycosides for Treatment of Human Genetic Diseases Caused by Nonsense Mutations. University of Alabama, CF Center, Bingham; June 11-12, **2009**.
33. **T. Baasov.** Redesign of Aminoglycosides for Better Antibacterial Performance and for Treatment of Human Genetic Diseases Caused by Nonsense Mutations. Gordon Research

- Conferences on Carbohydrates; Tilton School, New Hampshire, June 14-19, 2009. **Invited Keynote Lecture.**
34. **T. Baasov.** New Aminoglycosides to Fix Genetic Diseases-Causing Mutations: Design, Synthesis and Evaluation. 15<sup>th</sup> European Carbohydrate Symposium, Vienna, Austria, July 19-24, **2009. Invited Keynote Lecture.**
  35. **T. Baasov.** Designer Aminoglycosides: The Race to Develop Improved Antibiotics and Compounds for the Treatment of Human Genetic Diseases. 3<sup>rd</sup> ISBIE Symposium, Academia Sinica, Taiwan, Taipei, October 21-24, **2009. Invited Plenary.**
  36. **T. Baasov.** To Fix Faulty Genes by Aminoglycosides: Development of New Derivatives of Aminoglycosides for Treatment of Genetic Diseases. 75<sup>th</sup> Annual Meeting of Israel Chemical Society. David Intercontinental Hotel, Tecl Aviv; February 7-8, **2010.**
  37. **T. Baasov.** Designer Aminoglycosides: The Race to Develop Improved Antibiotics and Compounds for the Treatment of Human Genetic Diseases. One Day Symposium in Memory of Prof. Joe Spencer, 23 April, **2010**; University of Cambridge, Cambridge, UK. **Invited Plenary.**
  38. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. A Special Symposium in the Memory of Prof. Shimona Geresh, Ben-Gurion University, November 7, **2010.**
  39. **T. Baasov.** Repairing faulty genes by small molecules: Development of new derivatives of aminoglycosides for treatment of human genetic diseases. ILANIT-**2011**, Eilat, February 9, **2011.** Invited Keynote.
  40. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. ICS Annual meeting, Tel-Aviv, David Intercontinental Hotel, February 10, **2011. Invited Plenary.**
  41. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. Department of Chemistry, National Taiwan Normal University, Taipei, Taiwan, Sept. 4, **2011.** National Science Council of Taiwan Lectureship Award lecture. **Invited Plenary.**
  42. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. Department of Chemistry, National Taiwan University, Taipei, Taiwan, Sept. 5, **2011.** National Science Council of Taiwan Lectureship Award lecture. **Invited Plenary.**
  43. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. Genomic Center, Academia Sinica, Taipei, Taiwan, Sept. 8, **2011.** National Science Council of Taiwan Lectureship Award lecture. **Invited Plenary.**
  44. **T. Baasov.** Reversing the targeting of antibiotics from bacterial to human ribosome: a strategy towards treatment of human genetic diseases. The first binational UK-Israel Medicinal Chemistry Meeting., April 22-23, **2012**, Rechovot, Israel. **Invited Plenary.**
  45. **T. Baasov.** To fix nature's mistakes: Repairing human faulty genes by small molecules: development of new derivatives of aminoglycosides for treatment of human genetic diseases. 13<sup>th</sup> Annual Scientific Conference of FMRC "the endeavor to cure disease: novel approaches: June 11, **2012.** Belinson Hospital, Petach-Tikva. **Invited Plenary.**
  46. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. 26<sup>th</sup> International Carbohydrate Symposium, Madrid, July 23-27, **2012. Invited Keynote.**
  47. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. University of Michigan, Ann Harbor, December 11, **2012.**
  48. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. Cystic Fibrosis Foundation, Bethesda, USA; December 10, **2012.**
  49. **T. Baasov.** Development of New Potential Drug for the Treatment of Genetic Diseases. Novartis, Boston, USA; January 16, **2013.**
  50. **T. Baasov.** Development of New Potential Drug for the Treatment of Genetic Diseases. Pfizer, Boston, USA; January 15, **2013.**
  51. **T. Baasov.** Development of New Potential Drug for the Treatment of Genetic Diseases. Ponrifax-Roche, Presentation in Herzelia, June 9, **2013.**

52. **T. Baasov.** New Perspectives of Designer Oligosaccharides: From Fixing Human Faulty Genes to Controlled Gene Expression and anti-Leishmaniasis Agents; Academia Sinica, Genomic Center, Taipei, Taiwan; December 16, **2013**.
53. **T. Baasov.** New Perspectives of Designer Oligosaccharides: From Fixing Human Faulty Genes to Controlled Gene Expression; 27th International Carbohydrate Symposium, Bangalore, India; January 12-17, **2014**.
54. **T. Baasov.** New Perspectives of Designer Oligosaccharides: From Fixing Human Faulty Genes to Controlled Gene Expression; International Conference on Challenges in Chemistry and Biology of Carbohydrates-CARBO XXVIII, Dehradun, India; January, 20-22, **2014**.
55. **T. Baasov.** New Perspectives of Designer Oligosaccharides: From Fixing Human Faulty Genes to Controlled Gene Expression and anti-Leishmaniasis Agents; Wolf Symposium honoring the laureate of 2013 Wolf Prize in Chemistry, June 2, **2014**.
56. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. Umbrella Symposium, Technion, Haifa, February 9, **2015**. *Invited Plenary*.
57. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Sugars-Based Small Molecules. ICS Annual meeting, Tel-Aviv, David Intercontinental Hotel, February 10, **2015**. *Invited Keynote*.
58. **T. Baasov.** New Perspectives of Designer Oligosaccharides: Potential for Treatment of Human Genetic Disease and as Anti-Leishmanials. EuroCarb-18, Moscow, August 2-6, **2015**. *Invited Keynote*.
59. **T. Baasov.** New Perspectives of Designer Oligosaccharides: Potential for Treatment of Human Genetic Disease and as Anti-Leishmanials. ACS Annual Meeting, Boston, August 16-20, **2015**. *Invited Keynote*.
60. **T. Baasov.** New Perspectives of Designer Oligosaccharides: From Fixing Human Faulty Genes to Controlled Gene Expression and anti-Leishmaniasis Agents; A Special Colloquium at the Department of Chemistry, National Dong Hua University, Hualean, Taiwan, October 2, **2015**.
61. **T. Baasov.** New Perspectives of Designer Oligosaccharides: From Fixing Human Faulty Genes to Controlled Gene Expression and anti-Leishmaniasis Agents; A Special Colloquium at the Genomic Center, Academia Sinica, Taipei, Taiwan, October 6, **2015**.
62. **T. Baasov.** New Perspectives of Designer Oligosaccharides for Rational Drug Development. A series of seminars given as a part of Technion delegation in: Peking University (7.3.2016), Tsinghua University (8.3.2016), Peking Univ. Depart. Pharmacology (9.3.2016), Shanghai Jiaotong (10.3.2016).
63. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Aminoglycosides. Indo-German Conference on "recent applications of carbohydrates in chemistry and biology – RACCB-2017. February 13-17, 2017; Department of Chemistry, IIT (BHU) Varanasi, India. *Invited Plenary*.
64. **T. Baasov.** New Perspectives of Designer Oligosaccharides for Rational Drug Development. A series of seminars given at the Scripps Research Institute, Department of Chemistry, during a summer sabbatical stay there: August-September 2017.
65. **T. Baasov.** Prokaryotic versus Eukaryotic Ribosomal Selectivity as a Tool for New Drug Discovery. A special Israel-France Symposium, Strasbourg, October 23-25, 2018, France. *Invited Plenary*.
66. **T. Baasov.** Aminoglycosides - To Teach Old Drugs New Tricks. A special symposium dedicated to 70<sup>th</sup> birthday of Prof. Chi-Huey Wong. Hotel Royal Chiao His, Yilan Country, Taiwan, July 31-August 4, 2018. *Invited Plenary*.
67. **T. Baasov.** Redesign of Aminoglycosides for Treatment of Genetic Diseases. USA Cystic Fibrosis Foundation, the "Brainstorm Workshop on the treatment of CF Nonsense Mutations". Bethesda, MD, USA; January 22-23, 2019. *Invited Plenary*.
68. **T. Baasov.** To Fix Nature's Mistake: Repairing Human Faulty Genes by Small Molecules. 6<sup>th</sup> Weizmann-Czech Republic summer school on "drug discovery and development from basic research through preclinical to clinical phases". Prague, Czech Republic, September 2-6, 2019. *Invited Plenary*.
69. **T. Baasov.** Making Sense from Nonsense: Repairing Human Faulty Genes by Aminoglycosides. The ICS-NCK Prize lecture at the 85<sup>th</sup> Israel Chemical Society Meeting;

Jerusalem, Biniani Hauma, February 18-19, 2020, Israel. ***Invited 2020 NCK Prize Recipient Lecture.***

70.

**LIST OF SCIENTIFIC AND PROFESSIONAL PUBLICATIONS**Thesis

- 1979** M.Sc. thesis, under the supervision of Professor B. Fuchs. Thesis title: "Synthesis and Photochemistry of 1,2-Dihydrophthalic Thioanhydrides".
- 1986** Ph.D. thesis, under the supervision of Professor M. Sheves. Thesis title: "Researches in Visual Pigments and Bacteriorhodopsin".

Original Papers in Professional Journals with Referees (1982-2012)

- T. Baasov** and B. Fuchs. Photochemistry of Thioanhydrides. Photofragmentation of *cis*-1,2-Dihydrophthalic Thioanhydrides. *Tetrahedron Lett.* **23**, 1373-1376, (1982).
- M. Sheves, **T. Baasov** and N. Friedman. A Remarkable Blue Shift of Retinal Schiff Base due to Electronic Interaction of Positive Charges. *J. Chem. Soc., Chem. Commun.* 77-79, (1983).
- M. Sheves and **T. Baasov**. A Blue Shift of Protonated Retinal Schiff Base. A Model Study for Bacteriorhodopsin. *Tetrahedron Lett.* **24**, 1745-1748, (1983).
- M. Sheves, **T. Baasov**, N. Friedman, M. Ottolenghi, R. Feinmann-Weinberg, V. Rosenbach and B. Ehrnberg. On the Binding Site of Bacteriorhodopsin. A Study With Artificial Pigments. *J. Am. Chem. Soc.* **106**, 2435-2437, (1984).
- M. Sheves and **T. Baasov**. C=C Stretching Vibrational Frequencies in the Model Compounds of the Protonated Retinal Schiff Bases of Retinal. *Angew. Chem. Int. Ed. Eng.* **23**, 803-804, (1984).
- M. Sheves and **T. Baasov**. Factors Affecting the Rate of Thermal Isomerisation of 13-*cis*-Bacteriorhodopsin to all-*trans*. *J. Am. Chem. Soc.* **106**, 6840-6841, (1984).
- T. Baasov** and M. Sheves. On the Absorption Maxima of Protonated Retinal Schiff Bases. An Interaction with External Charges. *Isr. J. Chem.* **25**, 53-55, (1985).
- T. Baasov** and M. Sheves. Model Compounds for the Study of Spectroscopic Properties of Visual Pigments and Bacteriorhodopsin. *J. Am. Chem. Soc.* **107**, 7524-7533, (1985).
- T. Baasov** and M. Sheves. Alteration of pKa of the Bacteriorhodopsin Schiff Base. A study with Model Compounds. *Biochemistry* **25**, 5249-5258, (1986).
- R. Ghirlando, E. Berman, **T. Baasov** and M. Sheves. Interaction Between Protonated Schiff Base and Various Counterions: A Study by Two-Dimensional NOE NMR Spectroscopy. *Magn. Reson. Chem.* **25**, 21-24, (1987).
- M. Sheves and **T. Baasov**. Probing the Binding Site of Bacteriorhodopsin with a Fluorescent Chromophore. *J. Am. Chem. Soc.* **109**, 1594-1596, (1987).
- M. Sheves, **T. Baasov** and N. Friedman. Factors Affecting the C=N Stretching Frequency of Protonated Retinal Schiff Base. A Model Study for Bacteriorhodopsin and Visual Pigments. *Biochemistry* **26**, 3210-3217, (1987).
- T. Baasov** and J. R. Knowles. Is the First Enzyme of the Shikimate Pathway, 3-Deoxy-D-*arabino* Heptulosonate-7-Phosphate Synthase (Tyrosine-Sensitive), a Copper Metalloenzyme? *J. Bacteriol.* **171**, 6155-6160, (1989).
- T. Baasov** and A. Jakob. Anomeric Specificity of 3-Deoxy-D-*manno*-2-octulosonate 8-Phosphate Phosphatase from *Escherichia coli*. *J. Am. Chem. Soc.* **112**, 4972-4974, (1990).
- A. Kohen, A. Jakob and **T. Baasov**. Mechanistic Studies of 3-Deoxy-D-*manno*-2-octulosonate-8-Phosphate Synthase from *Escherichia coli*. *Eur. J. Biochem.* **208**, 443-449, (1992).
- S. Sheffer-Dee-Noor and **T. Baasov**. A Combined Chemical-Enzymatic Synthesis of a New Phosphoramidate Analogue of Phosphoenolpyruvate. *Bioorg. Med. Chem. Lett.* **3**, 1615-1618, (1993).
- A. Kohen, R. Berkovich, V. Belakhov and **T. Baasov**. Stereochemistry of the KDO8P Synthase. An Efficient Synthesis of the 3-Fluoro Analogues of KDO8P. *Bioorg. Med. Chem. Lett.* **3**, 1577-1582, (1993).
- S. Sheffer-Dee-Noor, V. Belakhov and **T. Baasov**. Insight into the Catalytic Mechanism of KDO8P Synthase. Synthesis and Evaluation of the Isosteric Phosphonate Mimic of the Putative Cyclic Intermediate. *Bioorg. Med. Chem. Lett.* **3**, 1583-1588, (1993).
- T. Baasov**, S. Sheffer-Dee-Noor, A. Kohen, A. Jakob and V. Belakhov. Catalytic Mechanism of 3-Deoxy-D-*manno*-2-octulosonate-8-phosphate Synthase. The Use of Synthetic Analogues to Probe the Structure of the Putative Reaction Intermediate. *Eur. J. Biochem.* **217**, 991-999, (1993).

20. A. Kohen, V. Belakhov and **T. Baasov**. Towards the Synthesis of the Putative Reaction Intermediate in the KDO8P Synthase-Catalyzed Reaction. Synthesis and Evaluation of 3-Deoxy-D-*manno*-2-octulosonate-2-phosphate. *Tetrahedron Lett.* **35**, 3179-3182, (1994).
21. S. Sheffer-Dee-Noor, V. Belakhov and **T. Baasov**. Synthesis of Novel Phosphonate Analogue of KDO as a tool for the design of potent inhibitors of Lipopolysaccharide Biosynthesis. *Tetrahedron Lett.* **35**, 5077-5080, (1994).
22. **T. Baasov** and A. Kohen. Synthesis, Inhibition and Acid-Catalyzed Hydrolysis Studies of Model Compounds of the Proposed Intermediate in the KDO8P Synthase-Catalyzed Reaction. *J. Am. Chem. Soc.* **117**, 6165-6174, (1995).
23. S. Du, D. Plat and **T. Baasov**. A New Model for the Stereoselective Construction of the Kdo Structure Through a Mechanism Similar to that Suggested for the Enzyme Kdo8P Synthase. *Tetrahedron Lett.* **37**, 3545-3548, (1996).
24. Y. Benenson, V. Belakhov and **T. Baasov**. 1-(Dihydroxyphosphinyl)vinyl Phosphate: The Phosphonate Analogue of Phosphoenolpyruvate is a pH-Dependent Substrate of Kdo8P Synthase. *Bioorg. Med. Chem. Lett.* **6**, 2901-2906, (1996).
25. S. Du, D. Plat, V. Belakhov and **T. Baasov**. First Nonenzymatic Synthesis of Kdo8P Through a Mechanism Similar to That Suggested for the Enzyme Kdo8P Synthase. *J. Org. Chem.* **62**, 794-804, (1997).
26. F. W. D'Souza, Y. Benenson and **T. Baasov**. Catalytic Mechanism of Kdo8P Synthase: Synthesis and Evaluation of A Putative Reaction Intermediate. *Bioorg. Med. Chem. Lett.* **7**, 2457-2462, (1997).
27. P-H. Liang, A. Kohen, **T. Baasov** and K. Anderson. Catalytic Mechanism of Kdo8P Synthase: Pre-Steady-State Kinetic Analysis Using Rapid Chemical Quench Flow Methods. *Bioorg. Med. Chem. Lett.* **7**, 2463-2468, (1997).
28. S. Du, H. Tsipori and **T. Baasov**. Synthesis and Evaluation of Putative Oxocarbenium Intermediate Mimic in the Kdo8P Synthase-Catalyzed Reaction as a Tool for the Design of Potent Inhibitors for Lipopolysaccharide Biosynthesis. *Bioorg. Med. Chem. Lett.* **7**, 2469-2474, (1997).
29. A. Mechaly, V. Belakhov, Y. Shoham and **T. Baasov**. An Efficient Chemical-Enzymatic Synthesis of 4-Nitrophenyl  $\beta$ -Xylobioside - A Chromogenic Substrate for Xylanases. *Carbohydr. Res.* **304**, 111-115, (1997).
30. P-H. Liang, J. Lewis, K. S. Anderson, A. Kohen, F. W. D'Souza, Y. Benenson and **T. Baasov**. Catalytic Mechanism of KDO8P Synthase: Transient Kinetic Studies and Evaluation of a Putative Reaction Intermediate. *Biochemistry* **37**, 16390-16399, (1998).
31. Z. Zhang, I. R. Ollmann, X-S. Ye, R. Wischnat, **T. Baasov** and C-H. Wong. Programmable One-Pot Synthesis of Oligosaccharides. *J. Am. Chem. Soc.* **121**, 734-753, (1999).
32. S. Du, H. Faiger, V. Belakhov and **T. Baasov**. Towards the Development of Novel Antibiotics Acting at the Lipopolysaccharide Biosynthesis: Synthesis and Evaluation of a Mechanism-Based Inhibitor of Kdo8P Synthase. *Bioorg. Med. Chem.* **7**, 2671-2682 (1999).
33. L. Kaustov, S. Kababya, S. Du, **T. Baasov**, S. Gropper, Y. Shoham, and A. Schmidt. Direct Identification of Enzyme Active Site Residues by Solid-State REDOR NMR: Application to Kdo8P Synthase. *J. Am. Chem. Soc.* **122**, 2649-2650, (2000).
34. A. Mechaly, A. Teplitsky, V. Belakhov, **T. Baasov**, G. Shoham, and Y. Shoham. Overproduction and Characterization of Seleno-Methionine Xylanase T-6. *J. Biotechnol.* **78**, 83-86, (2000).
35. L. Kaustov, S. Kababya, S. Du, **T. Baasov**, S. Gropper, Y. Shoham, and A. Schmidt. Structural and Mechanistic Investigation of 3-Deoxy-D-*manno*-2-octulosonate-8-phosphate Synthase by Solid-State REDOR NMR. *Biochemistry* **39**, 14865-14876, (2000).
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#### **COMMENTARIES ON PUBLISHED WORK**

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