



Curriculum Vitae

Personal data:

Name: Adnan Al-Lahham
Date of birth: 15, June 1963
Nationality: Jordanian/ German
Current job: Prof., German-Jordanian University Amman, Jordan
Telephone: +962 6 4294444/ Ext 4434
Mobile: +962 799706079
E mail: adnan.lahham@gnu.edu.jo

Education:

1981 Governmental High School Certificate.
1985 Bachelor of Public Health- Yarmouk University- Jordan.
1989 M.Sc in Biology-Microbiology-Yarmouk Univ. – Jordan.
1998 Ph. D in Biology- Microbiology- RWTH-Aachen- Germany.
9 Feb 1998 Ph. D Oral Exam (Mündliche Abschlussprüfung RWTH Aachen).

Scholarships

1981- 1985 Bachelor's Degree from the Ministry of Education, Jordan.
1985- 1989 Master's Degree from Yarmouk University, Jordan.
1992- 1996 Ph D, University of Aachen-Germany – from DAAD, Germany.

Experiences

1985-1992 Teaching and Research Assistant at Yarmouk University, Jordan University of Science and Technology (JUST), Royal Medical Service School and at High School in Sana'a- Yemen.
1992-1998 PHD Studies at RWTH-Aachen/Germany, with assisting in labs
1998-2006 Assistant Professor, Researcher and Diagnostics at the University Hospital of Aachen, Germany– Institute of Medical Microbiology and the National Research Center for Streptococci in Aachen-Germany.
Since Feb. 2006 Assistant Professor at the School of Applied Medical Sciences at the German-Jordanian University – Jordan.
2006-2007 German Jordanian University Council Member.
Aug 2016-to date German Jordanian University Council Member.
Mar.2008-Oct. 2013 Head of Biomedical Engineering Department at the GJU for 5 years until 2013.
Since 24.05.2010 Promoted as Associate Prof. at the GJU (First Promotion at the GJU).
2012-2013 Member of the GJU graduate studies and scientific research.
2016-2017 Member of the GJU graduate studies and scientific research.
Since 2nd Sems 15-16 Acting Head of Biomedical Engineering.
Summer 2015-2016 Acting Head of PCE department.
9. 08.2016-Sept.2020 Acting Dean of Applied Medical Sciences, and German year coordinator
9.08.2016-Sept 2018 Member of the scholarship committee of the GJU.
9.08.2016- 1.10.2017 Member of the research committee of the GJU.
9.08.2016- 8.10.2018 Member of the higher studies committee of the GJU.
2008- 2020 Exchange coordinator for Biomedical Engineering at the GJU and member of the German Year Committee at the GJU.
2006-2020 DAAD committee member for the pre-selection of PhD scholarships for Jordan Nationals.
2014-2020 GIZ, HOPES and DAAD member for selection of scholars for third country selection programmes for candidates from Syria, Palestine and Yemen for studding Masters in Jordan.

Oct. 2018-Sept. 2020 Member of Scientific Research Fund committee for basic sciences at the Ministry of High Education.
 2019-2020 Member of corona committee at the GJU
 2020 Member of the QS ranking committee at the GJU
 2017-Sept 2021 Member of the GJU Marketing committee at the GJU
 August 2022 Promoted to full professor at the GJU
Scientific Field According to Humboldt-Stiftung D103 (Medical Microbiology)

Computer Courses *Word*; Access; Excel; Corel; Power point.
Languages Arabic, English, German (excellent) and little Spanish

Discoveries

During PhD Gene description online; Locus T 38705; GI: 7490593; length 498; molecular weight 56152; checksum 2210; Gene # SPAC13F10.04 Map position 1; includes glutathione gamma glutamylcysteinyltransferase (EC 2.3.2.15); *glutathione synthase* (EC 6.3.2.3); superfamily *glutathione synthase*.
 1998 - 2006 Description of **30 new alleles** in 7 Housekeeping genes in *S. pneumoniae* (*aroE*, *gdh*, *gki*, *recP*, *spi*, *xpt*, and *ddl*), and Definition of **124 new Multi Locus Sequence Types** of *S. pneumoniae*, Description of **12 different sequences of the *ermB*** gene in *S. pneumoniae* submitted to EMBL Genbank with the following accession numbers: (DQ855638; DQ855639, DQ855640, DQ855641, DQ855642, DQ855643, DQ855644, DQ855645, DQ855646, DQ855647, DQ855648, DQ855649).

Memberships:

1993-2001 Environmental mutagen society, USA
 Since 2004 European Society for Chemotherapy, Vienna, Austria
 Since 2006 American Society for Microbiology, USA
 1998-2005 ESPED (European Soc. for Paediatric Infectious Diseases)

Awards:

2010 GJU Excellence day award as best researcher of the year 2010
2012 First Arab Creativity Conference Award for student Achievements and supervision
2018 Scientific Innovation Camp for Teachers and Students award

DFG Research stay

1. Summer 2006 in RWTH University Hospital of Aachen
 2. Summer 2008 in RWTH University Hospital of Aachen

Journal Reviewer

1. Jordan Journal for Biological Sciences
 2. International Arab Journal of Antimicrobial Agents
 3. PLoS ONE
 4. F1000Research

Publications: See Appendix A
Conferences: See Appendix B

Publications-Journal publications

1. Munir Abu-Helalah ¹, Asma'a Al-Mnayyis ², Hamed Alzoubi ³, Ruba Al-Abdallah ⁴, Hussein Jdaitawi ⁵, Omar Nafi ⁶, Kamel Abu-Sal ⁷, Alaa Altawalbeh ⁸, Alia Khlaifat ⁸, Enas Al-Zayadneh ⁹, Ihsan Almaaitah ¹⁰, Ibrahim Borghol ¹¹, Fadi Batarseh ⁴, Omar Okkeh ⁴, Abdallah Dalal ⁴, Ahmad Alhendi ⁴, Mohammad Almaaitah ⁸, Adnan Al-Lahham ¹², Mahmoud Gazo ¹³, Faisal Abu Ekteish ¹⁴, Ziad Elnasser ³. Epidemiology of *Streptococcus pneumoniae* Serotypes in Jordan Amongst Children Younger than the Age of 5: A National Cross-Sectional Study. *Vaccines (Basel)*. 2023 Aug 22;11(9):1396. DOI: 10.3390/vaccines11091396.
2. Adnan Al-Lahham^{1,*}. Book Title: Infectious Diseases Annual Volume 2022. Book edited by: Garbacz K. , Jarzembowski T. , Ran Y. , Samie A. and Saxena S. K. Book chapter title: Pneumococcal carriage in Jordanian children and the importance of vaccination. London: IntechOpen; 2022 [cited 2022 Dec 21]. 176 p. <https://www.intechopen.com/books/12880>. ISBN: 978-1-83768-944-6. 81821. pdf: <https://documentloading.com/viewer/8a4eb7e09a14419084009b54b24500fe>
3. Adnan Al-Lahham^{1,*}. Prevalence of pneumococcal carriage among Jordanian infants in the first six months of age, 2008-2016. *Vaccines* **2021**, *9*, 1283. <https://doi.org/10.3390/vaccines9111283> .
4. Adnan Al-Lahham^{1,*}, Nashat Khanfar², Noor Albataina¹, Rana Al Shwayat¹, Rawshan Altwal¹, Talal Abulfeilat¹, Ghaith Alawneh¹, Mohammad Khurd¹, and Abdelsalam Alqadi Altamimi¹. Urban and rural disparities in pneumococcal carriage and resistance in Jordanian children, 2015-2019. *Vaccines* 2021, *9*, 789. <http://doi.org/10.3390/vaccines9070789>. SCI.Q1. SJR 1.3
5. Adnan Al-Lahham. Multicenter study of pneumococcal carriage in children 2 to 4 years of age in the winter seasons of 2017-2019 in Irbid and Madaba governorates of Jordan. 2020. *PLoS ONE* 15 (8): e0237247. <http://doi.org/10.1371/journal.pone.0237247>
6. Adnan Al-Lahham, Jumana Abu Qayyas, Mark van der Linden. Impact of the 7 Valent Pneumococcal Conjugate Vaccine on Nasopharyngeal Carriage of *Streptococcus pneumoniae* in Infants of Ajlun Governorate in Jordan. 2018. **Jordan Journal of Biological Sciences**. 11 (2): 155-162.
7. Julia Schmitz*, Mark van der Linden, Adnan Al-Lahham, Natalia Levina, Mathias Pletz, Matthias Imöhl. Fluoroquinolone Resistance in *Streptococcus pneumoniae* isolates in

Germany from 2004-2005 to 2014-2015. 2017. **Journal of Medical Microbiology**. DOI. 10.1016/j.ijmm.2017.04.003. 307(3): ISSN 1438-4221. Accepted April 2017. Published May 2017. Impact factor 3.898

8. Adnan Al-Lahham. Health Related to Pneumococcal Carriage among the Pediatric Population of Jordan. 2017. Health Care Guide: Partnerships and Perspectives of Arab-German Cooperation. Pages 24-27.
9. Rawaa Al-Kayali, Hala Khyami-Horani, Mark van der Linden and Adnan Al-Lahham. Antibiotic resistance patterns and risk factors of *Streptococcus pneumoniae* carriage among healthy Jordanian children. 2016. European International Journal of Science and Technology. 5 (1): 55-76.
10. Adnan Al lahham, Mark van der Linden. 2015. *Streptococcus pneumoniae*, carriage, resistance and serotypes among Jordanian children from Wadi Al Seer District, JORDAN. **International Arab Journal of Antimicrobial Agents**. 4 (2:5): 1-8.
11. Allaoui, M., Cheriti, A., Al-Gharabli, S., Gherraf, N., Chebouat, E., Dadamoussa, B., Al-Lahham, A. A Comparative Study of the Antibacterial Activity of Two Chenopodiaceae: *Haloxylon scoparium* (Pomel) and *Traganum nudatum* Del. 2014. **Research Journal of Pharmaceutical, Biological and Chemical Sciences**. 85-89. ISSN: 0975-8585.
12. Chebouat, E., Dadamoussa, B., Al-Gharabli, S., Gherraf, N., Allaoui, M., Cheriti, A., Al-Lahham, A., Zellagui, A. Assissment of Antimicrobial Activity of Flavonoids Extract from *Ephedra alata*. 2014. **Der Pharmacia Lettre**, 6(3): 27-30. ISSN: 0975-5071.
13. Syrogiannopoulos GA, Grivea IN, Al-Lahham A, Panagiotou M, Tsantouli AG, Michoula Ralf René Reinert AN, van der Linden M. Seven-year surveillance of *emm* types of pediatric Group A streptococcal pharyngitis isolates in Western Greece. *PLoS One*. 2013 Aug 19;8(8):e71558.
14. Peter Uciechowski, Heidi Imhof, Christoph Lange, Christian G. Meyer, Rolf D. Horstmann, Detlef K. Kirsten, Anja K. Schröder, Bernd Schaaf, Adnan Al-Lahham, Ralf René Reinert, Norbert Reiling, Adelheid Hatzmann, Daniela Fleischer, Nicole Heusen, Michael Kleines, and Lothar Rink. Susceptibility to tuberculosis is associated with TLR1 743 polymorphism resulting in a lack of TLR1 cell surface expression. 2011. **Journal of Leukocyte Biology**. 90:377-388.

15. Lintges M, van der Linden M, Hilgers RD, Arlt S, Al-Lahham A, Reinert RR, Plücken S, Rink L. 2010. Superantigen genes are more important than the *emm* type for the invasiveness of group A *Streptococcus* infection. **J Infect Dis.** 2010 Jul 1;202(1):20-8.
16. Mark van der Linden, Adnan Al-Lahham, Werner Nicklas and Ralf René Reinert. Evidence for an Extra-Human Reservoir for Pneumococcal Infections in pets and Laboratory Animals. *PLoS One.* 2009 Dec 14. 4(12): e8286. **Impact factor 4.35**
17. Ralf René Reinert, Olga Y. Filimonova, **Adnan Al-Lahham**, Svetlana A. Grudinina, Elena N. Ilina, Linda M. Weigel, and Sergey V. Sidorenko. 2008. Characterization of the mechanisms of macrolide-resistance among *Streptococcus pneumoniae* isolates from Russia. **Antimicrob. Agents and Chemother.** 52(6):2260-2
18. Maria Lintges, Sabine Arlt, Peter Uciechowski, Birgit Plümäkers, Ralf R. Reinert, **Adnan Al-Lahham**, Rudolf Lütticken, Lothar Rink. 2007. A New Closed Tube Multiplex Realtime PCR to Detect the Eleven Superantigens of *Streptococcus pyogenes* Identifies a Strain Without Superantigen Activity. **Internat. J of Med Microbiol (IJMM).** 297(6):471-478.
19. Ralf René Reinert, Mark van der Linden, Irene Seegmüller, **Adnan Al-Lahham**, Anette Siedler, Bärbel Weißmann, Andre Toschke and Rüdiger von Kries. 2007. Molecular epidemiology of penicillin-resistant *Streptococcus pneumoniae* isolated from children with invasive pneumococcal disease in Germany. **Clin. Microbiol. and Inf. (CMI).** 13(4):363-368.
20. **Adnan Al-Lahham** and Ralf René Reinert. 2007. Time-kill kinetics of clinical isolates of *Streptococcus pneumoniae* with reduced susceptibility to telithromycin. **Chemotherapy.** 53(3):190-193
21. Mark van der Linden, **Adnan Al-Lahham**, Stefan Haupts, and Ralf René Reinert. 2007. Clonal spread of *mef* positive macrolide-resistant *Streptococcus pneumoniae* in invasive disease in adults in Germany. **Antimicrob Agents and Chemother** 51(5): 1830-1834.
22. Christiana Heeg, Carmen Franken, Mark van der Linden, **Adnan Al-Lahham** and Ralf René Reinert. 2007. Genetic diversity of pneumococcal surface protein A in *Streptococcus pneumoniae* in Germany. **Vaccine.** 25(6):1030-5.
23. **Adnan Al-Lahham**, Peter C. Appelbaum, Mark van der Linden, Ralf René Reinert. 2006. Telithromycin-nonsusceptible clinical isolates of *Streptococcus pneumoniae* from Europe. **Antimicrob Agents and Chemother.** 50(11):3897-3900.

24. Mahbubur Rahman, Shereen Shoma, Harunur Rashid, Shahadat Hussain, A. H. Baqui, Mark van der Linden, **Adnan Al-Lahham** and Ralf René Reinert. 2006. Emergence of a Unique Multiply Antibiotic-Resistant *Streptococcus pneumoniae* Serotype 7B Clone in Dhaka, Bangladesh. **Journal of Clinical Microbiology**. **44**(12): 4625-27.
25. Ioanna, N. Grivea, Adnan Al-Lahham, George D. Katapodis, George A. Syrogiannopoulos, Ralf R. Reinert. 2006. Resistance to erythromycin and telithromycin in *Streptococcus pyogenes* isolates from Greek children with Tonsillopharyngitis during 1999-2002: A phenotypic and genotypic analysis. **Antimicrob Agents and Chemother**. **50**(1):256-61.
26. Anette Siedler, Ralf René Reinert, Michael Toschke, Adnan Al-Lahham, Rüdiger von Kries, and ESPED Clinic and Laboratory Study Group. 2005. Regional differences in the epidemiology of invasive pneumococcal disease in toddlers in Germany. **Paediatric Infectious Disease Journal (PIDJ)**. **24**(12):1114-5.
27. Ralf René Reinert, Michael R. Jacobs, Peter C. Appelbaum, Saralee Bajaksouzian, Soraia Cordeiro, Mark van der Linden and Adnan Al-Lahham. 2005. Relationship between the original multiply resistant South African isolates of *Streptococcus pneumoniae* from 1977 to 1978 and contemporary international resistant clones. **Journal of Clinical Microbiology (JCM)**. **43**(12):6035-6041.
28. Ralf René Reinert, Stefan Haupts, Mark van der Linden, Christiane Heeg, Murat Cil, **Adnan Al-lahham** and David Fedson. 2005. Invasive pneumococcal disease in adults in North-Rhine Westphalia, Germany, 2001-2003. **Clinical Microbiology and Infection**. **11**(12):985-91.
29. **Adnan Al-Lahham**, Noel J. De Souza, Mahesh Patel, and Ralf René Reinert. 2005. Activity of the new quinolones WCK 771, WCK 1152 and WCK 1153 against clinical isolates of *Streptococcus pneumoniae* and *Streptococcus pyogenes*. **Journal of Antimicrobial Chemotherapy**. **56**(6): 1130-1133.
30. Ralf René Reinert, Mark van der Linden and **Adnan Al-Lahham**. 2005. Molecular characterization of the first telithromycin-resistant *Streptococcus pneumoniae* isolate in Germany. **Antimicrob Agents and Chemother**. **49**(8): 3520-3522.
31. Ralf René Reinert, Susanne Reinert, Murat Y Cil, Mark van der Linden, **Adnan Al-Lahham**, Peter Appelbaum. 2005. Antimicrobial susceptibility of *Streptococcus pneumoniae* in eight European countries in 2001-2003: findings of the PNEUMOWORLD study. **Antimicrob Agents and Chemother**. **49**(7): 2903-2913.
32. Ralf René Reinert and **Adnan Al-Lahham**. 2005. Time kill studies on the activity of telithromycin against macrolide-resistant *S. pneumoniae* isolates with mutations in the 23S

- rRNA and changes in the ribosomal proteins L4 and L22. **Antimicrobial Agents and Chemotherapy**. **49**(7): 3011-3013.
33. Ralf René Reinert, Adrian Ringelstein, Mark van der Linden, Murat Yücel Cil, **Adnan Al-Lahham** and Franz Josef Schmitz. 2005. Molecular epidemiology of macrolide-resistant *Streptococcus pneumoniae* isolates in Europe. **Journal of Clinical Microbiology**. **43**(3): 1294-1300.
34. Ralf René Reinert, Rudolf Lütticken, Susanne Reinert, **Adnan Al-Lahham**, and Sebastian Lemmen. 2004. Antimicrobial resistance of *Streptococcus pneumoniae* isolates of outpatients in Germany, 1999-2000. **Chemotherapy**. **50**(4):184-189.
35. **Adnan Al-Lahham**, Rudolf Lütticken and Ralf René Reinert. 2004. Molekularbiologische Untersuchungen bei Pneumokokkenstämmen mit Chinolon- und Makrolidresistenz. **Klinik und Forschung** **10** (supplement 1/2004): Pages, 20-21
36. Ralf René Reinert, Carmen Franken, Mark van der Linden, Rudolf Lütticken, Murat Cil, and **Adnan Al-Lahham**. 2004. Molecular characterisation of macrolide resistance mechanisms of *Streptococcus pneumoniae* and *Streptococcus pyogenes* isolated in Germany, 2002-2003. **International Journal of Antimicrobial Agents**. **24**(1): 43-47.
37. Ralf René Reinert, Rudolf Lütticken, and **Adnan Al-Lahham**. 2004. High-level fluoroquinolone resistance in a clinical *S. pyogenes* isolate in Germany. **Clinical Microbiology and Infection**. **10**(7): 659- 62.
38. Ralf René Reinert, Rudolf Lütticken, Joyce A. Sutcliffe, Amelia Tait-Kamradt, Murat Y. Cil, Holger M. Schorn, André Bryskier, and **Adnan Al-Lahham**. 2004. Clonal relatedness of erythromycin-resistant *Streptococcus pyogenes* isolates in Germany. **Antimicrobial Agents and Chemotherapy**. **48**(4): 1369-1373.
39. Reinert, R. R., Muckel, S., **Al-Lahham, A.**, Spratt, B. G., Brüggemann, A. B. , Hackenbeck, R., and Lütticken, R. 2003. Characterization of German penicillin non susceptible serotype 23F pneumococci using multilocus sequence typing. **J. Med. Microbiol.** **52**(pt11): 981-987.
40. Ralf René Reinert, Angela Wild, Peter Appelbaum, Andre´Bryskier, Rudolf Lütticken, Murat Yücel Cil, and **Adnan Al-Lahham**. 2003. Ribosomal mutations conferring resistance to macrolides in *Streptococcus pneumoniae* clinical strains isolated in Germany. **Antimicrobial Agents and Chemotherapy**. **47**(7): 2319-2322.
41. Reinert, R. R., Lütticken, R, Bryskier, A., Cremer, C., Neuberger, N. and **Al-Lahham, A.** 2003. Macrolide resistant *Streptococcus pneumoniae* and *Streptococcus pyogenes* in the pediatric population in Germany during 2000-2001. **Antimicrobial Agents and Chemotherapy**. **47**(2): 487-493.

42. Von Kries, R. Hermann, M., **Al-Lahham, A.**, Siedler, A., and Reinert, R. R. 2002. Will the 7- valent pneumococcal vaccine have a similar impact on all invasive pneumococcal infections in children in Germany as in the Kaiser permanent Trial? 2002. **Euro J Pediatr.** **161**(Supp2): 140-143.
43. Von Kries, R., Hermann, M., Hachmeister, A., Siedler, A., Schmitt, H. J., **Al-Lahham, A.** and Reinert, R. R. 2002. Prediction of the potential benefit of different pneumococcal conjugate vaccines on invasive pneumococcal disease in German children. **Pediatr Infect Dis J,** **21**(11): 1017-1023.
44. Reinert, R. R., **Al-Lahham, A.**, Lütticken, R. Boos, M., and Scmitz, F-J. 2001. Characterization of clinical *Streptococcus pneumoniae* strains from Germany with decreased susceptibility to fluoroquinolones. **J. Antimicrob. Chemother.** **49**(6): 1015-1018.
45. Reinert, R. R., **Al-Lahham, A.**, Lemperle, M., Tenholte, C., Briefs, C., Haupts, S., Gerard, H. H. and Lütticken, R. 2001. Emergence of macrolide and penicillin resistance among invasive pneumococcal isolates in Germany. **J. Antimicrob. Chemother.** **49**(1): 61-68.
46. Reinert, R. R., **Al-Lahham, A.** and Lütticken, R. 2001. *In-vitro* activity of cefditoren against clinical isolates of penicillin-susceptible and penicillin-intermediate strains of *Streptococcus pneumoniae* isolated in Germany, 1992-1998. **J. Antimicrob. Chemother.** **48**(2): 279-281.
47. Reinert, R. R., Eiff, C. v., Kresken, M. Brauers, J., Hafner, D., **Al-Lahham, A.**, Schorn, H., Lütticken, R., and Peters, G. 2001. Nationwide German multicenter study on the prevalence of antibiotic resistance in streptococcal blood isolates from neutropenic patients and comparative *in vitro* activities of Quinupristin-Dalfopristin and eight other antimicrobials. **J. Clinical Microbiology.** **39**(5): 1928-1931.
46. Reinert, R. R., Simic, S., **Al-Lahham, A.**, Reinert, S., Lemperle, M. and Lütticken, R. 2001. Antimicrobial resistance of *Streptococcus pneumoniae* recovered from outpatients with respiratory tract infections in Germany from 1998 to 1999: Results of a national surveillance study. **J. Clinical Microbiology.** **39**(3): 1187-1189.
47. Lemmen, S., **Al-Lahham, A.**, Lütticken, R. and Reinert, R. R. 2001. *In vitro* activity of gemifloxacin against *Streptococcus pneumoniae* isolates in Germany. **Chemotherapy.** **47**(2): 104-109.
48. Reinert, R. R., **Al-Lahham, A.**, Lemmen, S. and Lütticken, R. 2000. *In vitro* activity of gatifloxacin against *Streptococcus pneumoniae* isolates in Germany. **J. Antimicrob. Chemother.** **46**(5), 854-856.

49. **Al-Lahham, A.**, Rohde, V., Heim, P., Leuchter, R., Veek, J., Wunderlich, C., Wolf, K. and Zimmerman, M. 1999. Biosynthesis of Phytochelatin in the Fission Yeast. Phytochelatin Synthesis: A Second Role for the Glutathione Synthetase Gene of *Schizosaccharomyces pombe*. **Yeast.** **15**(5): 385-396.
50. **Al-Lahham A. B.**, M. Abu Saud and A. A. Shehabi. 1990. Prevalence of *Salmonella*, *Shigella* and Intestinal Parasites in Food- Handlers in Irbid- Jordan. **J. Diarrhoeal Dis. Res.** **8**(4): 160- 162.

Appendix B (Conferences)

- 1- **Adnan Al-Lahham**, Martin Zimmermann, Klaus Wolf. Analysis of Cadmium-Sensitive Mutants of *Schizosaccharomyces pombe*. 10. Hammermühle-Hefe-Tagung, Oct. 13-15, 1994, Ober-Ramstadt, Deutschland. P2.
- 2- **Adnan Al-Lahham**, Martin Zimmermann, Klaus Wolf. (Tag der Biologie) an der RWTH Aachen, Oct. 1994, and Oct. 1995 in Aachen, Deutschland. 2 Poster presented.
- 3- **Adnan Al-Lahham**, Martin Zimmermann, Klaus Wolf. Isolation and Characterization of a Putative *Schizosaccharomyces pombe* Gene for *Phytochelatin synthase*. VAAM Microbiology, 24-27 März, 1996, Bayreuth, Deutschland.
- 4- Martin Zimmermann, Ralf Leuchter, Christian Wunderlich, **Adnan Al-Lahham**, Quingshi Zhao, Michael Kriegmaier, and Klaus Wolf. Cadmium Resistance of *Schizosaccharomyces pombe*. Umbrilla-Symposium (Biotechnology): 10- 12 Nov. 1997/ Research Center of Jülich. PVIII.
- 5- **Adnan Al-Lahham**, Volker Rhode, Klaus Wolf, and Martin Zimmermann. Cloning and analysis of a DNA segment restoring phytochelatin synthesis in a mutant of fission yeast synthesizing glutathione but with a deficiency in phytochelatin synthesis. The 18th International Conference on Yeast Genetics and Molecular Biology. March 31st – April 5th, 1997. Stellenbosch-South Africa.
- 6- Martin Zimmermann, Christian Wunderlich, Volker Rhode, **Adnan Al-Lahham**, Quingshi Zhao, Ralf Leuschter and Klaus Wolf. Cadmium resistance of *Schizosaccharomyces pombe*. 18th International Specialized Symposium on Yeasts. August 24th – 29th, 1997. Bled, Slovenia.
- 7- **Adnan Al-Lahham**, Volker Rhode, Petra Heim, Ralf Leuschter, J. Veeck, Christian Wunderlich, Klaus Wolf, and Martin Zimmermann. Biosynthesis of phytochelatins in fission yeast. Current genetics 35: 375. XIX International Conference on Yeast Genetics and Molecular Biology. May 1999
- 8- Reinert, R. R., **A. Al-Lahham**, R. Lütticken and K. Machka. 1999. *In vitro* Activity of SB-265805 against *Streptococcus pneumoniae* in Germany. 9th **ECCMID** (European Conference of Clinical Microbiology and Infectious Diseases). 21th - 24th März 1999 in Berlin. P 219.

- 9- Ralf Rene Reinert, Anette Siedler, **Adnan Al-Lahham**, Rudolf Lütticken, Rüdiger v. Kreis. Invasive pneumococcal infections among children in Germany: Incidence, serotype distribution, and antibiotic susceptibility. *ESPID`99* (17th Annual Meeting of the European Society for Paediatric Infectious Diseases). 19th- 21th May 1999 in Heraklion, Crete, Greece. P 138.
- 10- Reinert, R. R., **A. Al-Lahham**, S. Simic, S. Reinert, M. Lemperle, and R. Lütticken. Antimicrobial Resistance of *Streptococcus pneumoniae* Recovered from Respiratory Tract Infections (RTI) of Outpatients in Germany, 1998- 1999: Results of a 20 Center National Surveillance Study. 39th *ICAAC* (Interscience Conference on Antimicrobial Agents and Chemotherapy). 24th-29th Sept. 1999 in San Francisco/ U.S.A. P1041.
- 11- Reinert, R. R., Siedler, A., **Al-Lahham, A.**, Lütticken, R., Kries, R. v. 1999. Invasive Pneumococcal Disease in the Pediatric Population of Germany: First Results of a Nation-Wide Population-Based Study. Proceedings of the XIV Lancefield International Symposium on Streptococci and Streptococcal Diseases (XIV LISSSD). Auckland, New Zealand/ 11-15. Oct. 1999. P3.5.
- 12- Reinert, R. R., Janetzko-Schmid, P., **Al-Lahham, A.**, Reinert, S., Lemperle, M. and Lütticken, R. 2000. In Vitro Activity of Gatifloxacin against *Streptococcus pneumoniae* Isolates in Germany. Munich. 8th Biennial Conference on Antiinfective Agents and Chemotherapy (BICON 2000). 12-15 March 2000. P234.
- 13- **Al-Lahham, A.**, Tenholte, C., Lütticken, R. and R. R. Reinert. 2000. Characterization of penicillin resistant pneumococci isolated in Germany: 1992-1998. Munich (DGHM 2000) 12-16 March 2000. Poster 15.P.16.04.
- 14- **Al-Lahham, A.**, Stefan, H., Lütticken, R. and R. R. Reinert. 2000. Serotype distribution, antimicrobial resistance and molecular characterization of erythromycin resistant *Streptococcus pneumoniae* in Germany, 1992-1998. Munich (DGHM 2000) 12-16 March 2000. Poster 15.P.16.03.
- 15- Reinert, R. R., **Al-Lahham, A.**, Haupts, S. and Lütticken, R. 2000. Increase of erythromycin resistance among clinical isolates of *Streptococcus pneumoniae* in Germany. The second International Symposium on Pneumococci and Pneumococcal Diseases. Sun City, North-West Province, South Africa, 19- 23 March 2000. Poster P81.

- 16- Reinert, R. R., **Al-Lahham, A.**, Simic, S. and Lütticken, R. 2000. Nationwide surveillance study on antibiotic resistance of *Streptococcus pneumoniae* isolated from respiratory tract infections of outpatients in Germany, 1998-1999. The second International Symposium on Pneumococci and Pneumococcal Diseases. Sun City, North-West Province, South Africa, 19- 23 March 2000. Poster P82.
- 17- Reinert, R. R., **Al-Lahham, A.**, Tenholte, C., Haupts, S. and Lütticken, R. 2000. Surveillance of Antibiotic Resistance of Pneumococci in Germany, 1992-1998. 9th International Congress on Infectious Diseases (9th ICID) . Buenos Aires, Argentina. April 10-13, 2000. P 12.011.
- 18- Reinert, R. R., **Al-Lahham, A.**, Bungenstab, J., Schorn, H. and Lütticken, R. 2000. Antibiotic resistance of *Streptococcus pyogenes* and *S. pneumoniae* strains isolated from infections of outpatients in Germany, 1999-2000. The 40th Interscience Conference on Antimicrobial Agents and Chemotherapy ICAAC 2000. Toronto, Canada. Sept. 17-20, 2000. Poster 2150.
- 19- Reinert, R. R., Siedler, A., **Al-Lahham, A.** Lütticken, R. and Kries, v. R. 2001. Surveillance of invasive pneumococcal disease in the paediatric population of Germany, 1992-1999. The 19th Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID), Istanbul, Turkey. March 26-28, 2001. Poster 176.
- 20- Reinert, R. R., **Al-Lahham, A.**, Muckel, S. and Lütticken, R. 2001. Characterization of serotype 23F penicillin non-susceptible *Streptococcus pneumoniae* strains isolated in Germany with Multilocus Sequence Typing. (ECCMID) Istanbul, Turkey. April 1-4, 2001. Clinical Microbiology and Infection 7 (1): 1-394. AbstractP583.
- 21- Reinert, R. R., **Al-Lahham, A.**, Ringelstein, A., Lütticken, R. and Schmitz, F.-J. 2001. Characterization of erythromycin resistant *S. pneumoniae* isolates recovered from eleven European medical centers. (ECCMID) Istanbul, Turkey. April 1-4, 2001. Clinical Microbiology and Infection 7 (1): 1-394. Abstract P472.
- 22- Reinert, R. R., **Al-Lahham, A.**, Haupts, S., and Lütticken, R. 2001. Incidence of M-phenotype (*mefE*) and MLSB-type (*ermB*) among erythromycin resistant *S. pneumoniae* isolates recovered in Germany; 1992-1999. (ECCMID) Istanbul, Turkey. April 1-4, 2001. Clinical Microbiology and Infection 7 (1): 1-394. Abstract P473.
- 23- Reinert, R. R., **Al-Lahham, A.**, Marek, A., Lütticken, R and Spellerberg, B. 2001. Allelic variations of an internal locus of the pyruvate oxidase gene *spxB* among pneumococci isolated in Germany. (ECCMID) Istanbul, Turkey. April 1-4, 2001. Clinical Microbiology and Infection 7 (1): 1-394. Abstract P585.

- 24- Gellner, K., Gartung, C., Janssens, S., Lemmen, S., **Al-Lahham, A.**, Matern, Lütticken, R. and Reinert, R. R. 2001. Infective endocarditis caused by methicillin-resistant *Staphylococcus aureus* successfully treated with quinupristin-dalfopristin and cefepime. 6th European Conference on Infectious Diseases (EuCID). Leipzig, Germany. Mai 3-6, 2001. Poster PP A. 35.
- 25- Reinert, R. R., Muckel, S., Lütticken, R and **Al-Lahham, A.** 2001. Characterization of the German penicillin non susceptible *Streptococcus pneumoniae* strains of the serotype 23F with Multilocus Sequence Typing. (35th DGHM) Aachen, Germany. 29. Sept. 2001- 4 Oct. 2001. Poster 106.
- 26- Reinert, R. R., Lütticken, R. Briefs, C., Neuberger, N., Lemperle, M., and **Al-Lahham, A.** 2001. Antibiotic resistance of *Streptococcus pyogenes* and *Streptococcus pneumoniae* strains isolated from RTI of outpatients in Germany, 2000-2001. 41th ICAAC in Chicago, USA. Dec. 16-19, 2001. Poster 693. Correspondence to Adnan Al-Lahham.
- 27- Reinert, R. R., Siedler, A., **Al-Lahham, A.**, Lütticken, R. and Kries, R. V. 2002. A four year surveillance of invasive pneumococci in the pediatric population of Germany before starting vaccination with prevenar. Poster 2001-A-141. ISPPD, May 5-8, 2002; Anchorage, Alaska, USA.
- 28- Rudolf Lütticken, Claudia Brandt, Ralf René Reinert, **Adnan Al-Lahham**, Barbara Spellerberg, Gerhard Haase. Report of the National Reference Center for Streptococci, 54. Jahres Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, Heidelberg.
- 29- Siedler, A., Hermann, M., **Al-Lahham, A.**, Reinert, R. R. von Kries R. 2002. Will the 7 valent pneumococcal vaccine have a similar impact on all invasive pneumococcal infections in German children as shown in the kaiser permanente trial? ESPID. Litauen.
- 30- Ralf René Reinert, Stefan Happts, Nelli Neuberger, Claudia Briefs, Maria Lemperle, Rudolf Lütticken, **Adnan Al-Lahham**. 2002. Characterization of macrolide resistant invasive *Streptococcus pneumoniae* strains isolated in Germany. 42th ICAAC, 27-30 September 2002. Abstract no. C2-1627. San Diego, California, American Society for Microbiology, Washington DC, USA.

Dr. rer. nat. Adnan Al-Lahham * Moltke Str. 15a * 52066- Aachen * Telefax 0241/ 6088453 * E-mail: aal@ukaachen.de

- 31- R. R. Reinert, P. Appelbaum, H. Adler, **A. Al-Lahham**, F. Allerberger, P. Allouch, J. M. Amorium, M. L. A. Boaventura, M. Y. Cil, J. J. P. de la Garza, J. Etienne, G. Fadda, G. Funke, J. Garau, A. Georgopoulos, G. Gesu, M. Gobernado, P. Janetzko-Schmid, R. Leclercq, H. Mauch, J. A. G. Melo Christino, G. Miragliotta, H. Mittermayer, H. Monteil, G. Nicoletti, G. Palu, W. Pfister, J. P. Prieto, A. P. Rodloff, J. A. G. Rodrigues, G. C. Schito, S. Schmid, S. Schmitt, H. H. Siegrist, C- J. Soussy, M. Streulens, J. Verhaegen, S. Reinert. Surveillance of Antibiotic Resistance among Clinical Isolates of *Streptococcus pneumoniae* in 2000/2001 in Europe- First Results of the PNEUMOWORLD STUDY. 42th ICAAC, 27-30 September 2002. Abstract no. **C2-1623**. San Diego, California, American Society for Microbiology, Washington DC, USA.
- 32- Reinert RR, Cremer C, Neuberger N, Lütticken R, **Al-Lahham A**. Characterization of *S. pneumoniae* and *S. pyogenes* strains isolated from the respiratory tract of pediatric outpatients in Germany. XVth Lancefield International Symposium on Streptococci and Streptococcal Disease (LISSSD) Meeting, 6-11 October, 2002, Goa, India. Paper Abstract no. P4.22.
- 33- Reinert RR, Siedler A, Lütticken R, Hermann M, von Kries R, **Al-Lahham A**. Surveillance of invasive pneumococci in the pediatric population of Germany, 1997-2000. XVth Lancefield International Symposium on Streptococci and Streptococcal Disease (LISSSD) Meeting, 7-11 October, 2002. Goa, India. Abstract no. P1.16.
- 34- Reinert, R. R., Siedler A., **Al-Lahham A.**, Hermann, M., Lütticken, R., von Kries R. 2002. Invasive Pneumokokkenerkrankungen bei Kindern in Deutschland: Ergebnisse einer vierjährigen Surveillance-Studie. Nov 2002. Wiesbaden DGPI (Deutsche Gesellschaft für Paediatrische Infektiologie). Poster Gruppe 3: Poster-Nummer 5.
- 35- Reinert, R. R., Siedler A., Hermann, M., Lütticken, R., von Kries R., **Al-Lahham A**. 2003. A Five Year Surveillance of Invasive Pneumococci in the pediatric population of Germany before Starting vaccination with Prevenar. 7 Kongress für Paediatrische Infektiologie und Tropenmedizin, Berlin- Deutschland 27.02.2003-1.03.2003. Poster: ABS 8460-00287.
- 36- Reinert, R. R., Siedler A., Hermann, M., Lütticken, R., von Kries R., **Al-Lahham A**. 2003. A Five Year Surveillance of Invasive Pneumococci in the Pediatric Population of Germany and the coverage of the 7 valent pneumococcal conjugate vaccine. 21st ESPID. Giardini, Naxos, Taormina, Sicily-Italy. 9-11 April- 2003. Abstract No. 281.

- 37- Siedler, A., Toschke, M., Hermann, M., **Al-Lahham, A.**, Reinert, R. R., von Kries R. 2003. How many cases may be prevented by vaccination of risk groups with the 7- valent pneumococcal conjugate vaccine?. 21st ESPID. Giardini, Naxos, Taormina, Sicily-Italy. 9-11 April- 2003. Abstract No. 287.
- 38- Reinert, R. R., Neuberger, N., Cil, Y. M., Cremer, C., Lemperle, M., Lütticken, R., **Al-Lahham, A.** 2003. Characterization of *S. pneumoniae* and *S. pyogenes* strains isolated from the respiratory tract of paediatric outpatients in Germany, 2002. 13th ECCMID, Glasgow, Scotland 10-13 May, 2003. Poster 1574. + one Lecture on invasive pneumococci in children.
- 39- Reinert, R. R., Siedler, A., Hermann, M., Lütticken, R., von Kries, R., **Al-Lahham, A.** 2003. Invasive pneumococci in the paediatric population in Germany: Epidemiology and coverage of the 7- valent pneumococcal conjugate vaccine, 1997-2001; abstract O70; 13th European Congress of Clinical Microbiology and Infectious Diseases, Glasgow, Great Britain, 10-13 May 2003. In *Clinical Microbiology and Infection*, 9 (Suppl. 1, 2003).
- 40- Reinert, R. R., Neuberger, N., Cil, M., Cremer, C., Lemperle, M., Lütticken, R., **Al-Lahham, A.** 2003. Characterization of *Streptococcus pneumoniae* and *Streptococcus pyogenes* strains isolated from the respiratory tract of pediatric outpatients in Germany, 2002; Abstract P 1574; 13th European Congress of Clinical Microbiology and Infectious Diseases, Glasgow, Great Britain, 10-13 May 2003. In *Clinical Microbiology and Infection*, 9 (Suppl. 1, 2003).
- 41- Grivea, I. N., **Al-Lahham, A.**, Katopodis, G. D., Syrogiannopoulos, G. A., Reinert, R. R. 2003. Susceptibility and mechanisms of resistance of erythromycin-resistant (Ery-R) *Streptococcus pyogenes* (GAS) isolates from children with tonsillopharyngitis: The 1999-2002 Hellenic antibiotic-resistant respiratory pathogens (HARP) study. Abstract No. C2-73, p113. 43rd ICAAC, 14-17 Sept. 2003, Chicago, Illinois, USA.
- 42- Reinert, R. R., Appelbaum, P., Reinert, S., **Al-Lahham, A.**, European Study Group. 2003. Macrolide and fluoroquinolone resistance mechanisms of pneumococci in Europe. Abstract No. C2-931, p129. 43rd ICAAC, 14-17 Sept. 2003, Chicago, Illinois, USA.
- 43- Reinert, R. R., Lütticken, R., Appelbaum, P., Reinert, S., **Al-Lahham, A.** 2003. Macrolide and fluoroquinolone resistance mechanisms of *S. pneumoniae* isolates from 8 European countries. *International Journal of Medical Microbiology*. Volume 293 (Supplement No. 36). Page 317. Abstract No. MSP004. 55th DGHM-Tagung. Dresden-Germany. 28.9-1.10.2003.
- 44- Reinert, R. R., Appelbaum, P., Lütticken, R. **Al-Lahham, A.** Reinert, S. 2003. Antibiotic resistance of pneumococci in Europe, 2001-2003 (PNEUMOWORLD-STUDY).

- International Journal of Medical Microbiology. Volume 293 (Supplement No. 36). Page 321. Abstract No. MSP008. 55th DGHM-Tagung. Dresden-Germany. 28.09-1.10.2003.
- 45- Reinert, R. R., Lütticken, R., Sutcliffe, J., Cil, M.Y., Bryskier, A., **Al-Lahham, A.** 2003. Molecular epidemiology of *S. pyogenes* strains isolated from outpatients in Germany, 1999-2000. International Journal of Medical Microbiology. Volume 293 (Supplement No. 36). Page 322. Abstract No. MSP010. 55th DGHM-Tagung. Dresden-Germany. 28.09-1.10.2003.
- 46- Reinert, R. R., Siedler, A. Lütticken, R., von Kries, R., **Al-Lahham, A.** 2003. Molecular epidemiology of antibiotic resistant pneumococcal strains isolated from children in Germany. International Journal of Medical Microbiology. Volume 293 (Supplement No. 36). Page 323. Abstract No. MSP011. 55th DGHM-Tagung. Dresden-Germany. 28.09-1.10.2003.
- 47- Reinert, R. R., Neuberger, N., Cil, M. Y., Cremer, C., Lemperle, M., Lütticken, R., **Al-Lahham, A.** 2003. Emergence of antibiotic resistance among *S. pneumoniae* and *S. pyogenes* strains isolated from the respiratory tract infections of children in Germany, 2002. International Journal of Medical Microbiology. Volume 293 (Supplement No. 36). Page 327. Abstract No. MSP017. 55th DGHM-Tagung. Dresden-Germany. 28.09-1.10.2003.
- 48- Reinert, R. R., Reinert, S., Appelbaum, P., Cil, M., Lütticken, R., **Al-Lahham, A** and Pneumoworld Study Group. 2004. Resistance rates and resistance mechanisms of *S. pneumoniae* strains isolated from 8 European countries: Final report of the pneumoworld study. 14th European Congress of Clinical Microbiology and Infectious Diseases. Prague-Czech Republic, May 1-4, 2004. Poster 1740. Page 138.
- 49- Mahbubur Rahman, Shoma, S., Rashid, H., Hossain, S., Baqui, A. H., Reinert, R. R., **Al-Lahham, A.**, and Breiman, R. 2004. Antibiotic susceptibility and serotypes distribution of invasive and carrier isolates of *S. pneumoniae* from pediatric patients with pneumoniae and meningitis in Bangladesh. 4th International Symposium on Pneumococci and Pneumococcal Diseases. May 9-13, 2004. Marina Congress Center, Helsinki, Finland. Poster No.: EPI 50. Page 57.

- 50- Reinert, R. R., **Al-Lahham, A.**, Siedler, A., Toschke, M., Cil, M. Y., Lütticken, R., von Kries, R. 2004. Epidemiology of invasive pneumococcal disease (IPD) in the pediatric population of Germany: Nationwide surveillance, 1997-2002. 4th International Symposium on Pneumococci and Pneumococcal Diseases. May 9-13, 2004. Marina Congress Center, Helsinki, Finland. Poster No.: EPI 70. Page 67.
- 51- **Al-Lahham, A.**, Schmitz, F-J., Ringelstein, A., Lütticken, R., Cil, M. Y., Reinert, R. R. 2004. Multilocus sequence typing of macrolide resistant *S. pneumoniae* isolates recovered from eleven European centers. 4th International Symposium on Pneumococci and Pneumococcal Diseases. May 9-13, 2004. Marina Congress Center, Helsinki, Finland. Poster No.: RES 11. Page 120.
- 52- **Al-Lahham, A.**, Franken, C., Neuberger, N., Cil, M. Y., Lütticken, R., Reinert, R. R. 2004. A multicenter surveillance of resistance in *S. pneumoniae* and *S. pyogenes* strains and development of a LightCycler PCR method for rapid detection of macrolide resistance. 4th International Symposium on Pneumococci and Pneumococcal Diseases. May 9-13, 2004. Marina Congress Center, Helsinki, Finland. Poster No.: RES 12. Page 120.
- 53- Reinert, R. R., **Al-Lahham, A.**, Siedler, A., Toschke, M., Cil, M. Y., Lütticken, R., von Kries, R. 2004. Nationwide surveillance of invasive pneumococcal disease (IPD) in the pediatric population of Germany. 22nd Annual Meeting of the European Society for Pediatric Infectious Diseases. May 26-28, 2004. Tampere, Finland. Poster No.: P 132. Page 67.
- 54- Anette Siedler, Ralf René Reinert, **Adnan Al-Lahham**, Michael Toschke, Rudiger von Kries. Regional differences in epidemiology of invasive pneumococcal disease (IPD) in toddlers in Germany. 22nd Annual Meeting of the European Society for Pediatric Infectious Diseases. May 26-28, 2004. Tampere, Finland. Poster No.: 139. Page 70.
- 55- **Adnan Al-Lahham**, Mahbubur Rahman, Shereen Shoma, Harunur Rashid, Shahadat Hossain, A. H. Baqui, Ralf René Reinert. Resistance of *Streptococcus pneumoniae* to macrolide and tetracycline in Bangladesh. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. MSP 011. Pages 178.
- 56- **Adnan Al-Lahham**, Sandra Da Conceicao Barosa, Rudolf Lütticken, Ralf René Reinert. In vitro time-kill pharmacodynamics of telithromycin against macrolide resistant pneumococcal strains harbouring ribosomal mutations. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. MSP 010. Pages 177.

- 57- Christiana Heeg, Mark van der Linden, **Adnan Al-Lahham**, Rudolf Lütticken, Ralf René Reinert. Diversity of pneumococcal surface protein A (PspA) in clinical pneumococcal isolates in Germany. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. RKP 003. Pages 216.
- 58- Ralf René Reinert, **Adnan Al-Lahham**, Anette Siedler, Michael Toschke, Murat Cil, Rudolf Lütticken, Rudiger von Kries. Six year nationwide surveillance of invasive *S. pneumoniae* infections in the pediatric population of Germany, 1997-2002: Incidence, epidemiology of resistance and coverage of PREVENAR conjugate vaccines. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. MSP 013. Pages 178.
- 59- **Adnan Al-Lahham**, Murat Cil, Rudolf Lütticken, Ralf René Reinert. Population-based surveillance of invasive *Streptococcus pneumoniae* infections in adults in North-Rhein Westfalia, Germany 2001-2003. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. MSP 006. Pages 175.
- 60- **Adnan Al-Lahham**, George Syorgiannopoulos, George Katapodis, Ralf René Reinert. Characterization of erythromycin resistant (ERY-R) *Streptococcus pyogenes* isolates from Greek children with tonsillopharyngitis, 1999-2002. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. MSP 007. Pages 176.
- 61- **Adnan Al-Lahham**, Nelli Neuberger, Sandra Da Conceicao Barosa, Ingrid Klawitter, Rudolf Lütticken, Christiana Heeg, Ralf René Reinert. Epidemiology of resistance of *Streptococcus pneumoniae* and *Streptococcus pyogenes* in a multicenter study in Germany, 2003-2004. 56 Jahrestagung der DGHM. 26.09- 29.09. 2004. Münster, Germany. Poster No. MSP 008. Pages 176.
- 62- **Adnan Al-Lahham**, Nelli Neuberger, Sandra Da Conceicao Barosa, Ingrid Klawitter, Christiana Heeg, Rudolf Lütticken, Ralf René Reinert. Antimicrobial resistance of *Streptococcus pneumoniae* and *Streptococcus pyogenes* in Germany: Multicenter study 2003-2004. 44th annual ICAAC. 30 October-2. November 2004. Washington DC, USA. Poster C2-811, Page 47.
- 63- Christiana Heeg, Mark van der Linden, **Adnan Al-Lahham**, Rudolf Lütticken, Ralf René Reinert. Diversity of pneumococcal surface protein A (PspA) in clinical pneumococcal isolates in Germany. 44th annual ICAAC. 30 October-2. November 2004. Washington DC, USA. Poster G-532, Page 30.

- 64- **Adnan Al-Lahham**, Sandra Da Conceicao Barosa, Rudolf Lütticken, Ralf René Reinert. In vitro time-kill pharmacodynamics of telithromycin against macrolide resistant *S. pneumoniae* isolates possessing ribosomal mutations. 44th annual ICAAC. 30 October-2. November 2004. Washington DC, USA. Poster E2066, Page 115.
- 65- I. N. Grivea, **A. Al-Lahham**, G. D. Katopodis, G. A. Syrogiannopoulos, R. R. Reinert. Clonal spread of telithromycin resistant (Teli-R) *Streptococcus pyogenes* (GAS) in Greece. 44th annual ICAAC. 30 October-2. November 2004. Washington DC, USA. Poster C2 799, Page 46.
- 66- C. Heeg, C. Franken, M. van der Linden, A. Al-Lahham, R.R. Reinert. Genetic characterisation of pneumococcal surface protein A. *Clinical Microbiology and Infection*, Volume 11, Supplement 2, 2005. 15th European Congress of Clinical Microbiology and Infectious Diseases. Copenhagen, Denmark. 2-5 April 2005. Poster 614. Page 171.
- 67- C. Heeg, C. Franken, M. van der Linden, A. Al-Lahham, R.R. Reinert. Phenotypic and genotypic characterisation of 'atypical' *Streptococcus pneumoniae* isolates by MLST. *Clinical Microbiology and Infection*, Volume 11, Supplement 2, 2005. 15th European Congress of Clinical Microbiology and Infectious Diseases. Copenhagen, Denmark. 2-5 April 2005. Poster 632. Page 177-178.
- 68- A. Al-Lahham, N. Neuberger, S. Barbosa, I. Klawiter, M. van der Linden, C. Heeg, R.R. Reinert. Characterisation of the first telithromycin resistant pneumococcal isolate in Germany. *Clinical Microbiology and Infection*, Volume 11, Supplement 2, 2005. 15th European Congress of Clinical Microbiology and Infectious Diseases. Copenhagen, Denmark. 2-5 April 2005. Poster 1036. Page 321.
- 69- C. Heeg, M. van der Linden, A. Al-Lahham, R. R. Reinert. Characterisation of quinolone-resistant *Streptococcus pneumoniae* isolates in Germany. *Clinical Microbiology and Infection*, Volume 11, Supplement 2, 2005. 15th European Congress of Clinical Microbiology and Infectious Diseases. Copenhagen, Denmark. 2-5 April 2005. Poster 1037. Page 321.
- 70- M. van der Linden, A. Al-Lahham, N. Neuberger, S. Barbosa, C. Heeg, R.R. Reinert. Community-acquired pneumococcal pneumonia in Germany first results of the CAPNETZ study. *Clinical Microbiology and Infection*, Volume 11, Supplement 2, 2005. 15th European Congress of Clinical Microbiology and Infectious Diseases. Copenhagen, Denmark. 2-5 April 2005. Poster 1777. Page 586.
- 71- Al-Lahham, A., Heeg, C., Franken, C., van der Linden, M.P.G. and Reinert, R.R. Molecular characterisation of atypical *Streptococcus pneumoniae* strains recovered at the National

- Reference Center for Streptococci in Germany. P4.06. 7th European Meeting on the Molecular Biology of Pneumococcus. 8th-11th May, 2005. GBF Braunschweig, Germany. GBF German Research Centre for Biotechnology, Braunschweig, Germany. Center of Infectious Diseases, University of Würzburg, Germany.
- 72- Heeg, C., Al-Lahham, A., Franken, C., van der Linden, M.P.G. and Reinert, R.R. The pneumococcal surface protein A (PspA): Genetical characterisation in clinical isolates in Germany. P4.07. 7th European Meeting on the Molecular Biology of Pneumococcus. 8th-11th May, 2005. GBF Braunschweig, Germany. GBF German Research Centre for Biotechnology, Braunschweig, Germany. Center of Infectious Diseases, University of Würzburg, Germany.
- 73- Al-Lahham, A., von Kries, R., Siedler, A., Toschke, M. and Reinert, R.R. Invasive pneumococcal disease in the pediatric population of Germany (1997-2003): Coverage of the 7V-PCV, resistance rates and serotype distribution. 23rd ESPID 2005. 18-20.05.2005. Valencia-Spain. Poster Nr. 91.
- 74- Reinert, R.R., Siedler, A., Al-Lahham, A., Toschke, M. and von Kries, R. Invasive pneumococcal disease in children vaccinated with the 7-valent pneumococcal conjugate vaccine in Germany. 23rd ESPID 2005. 18-20.05.2005. Valencia-Spain. Poster Nr. 224.
- 75- M. van der Linden, A. Al-Lahham, N. Neuberger, S. Barbosa, C. Heeg, R.R. Reinert. First results of the CAPNETZ study on community acquired pneumococcal pneumoniae in Germany. DGHM/VAAM- Göttingen Jahrestagung. Germany, 25-28 Sept. 2005. Poster PIP012.
- 76- Ralf René Reinert, Christiane Heeg, Adnan Al-Lahham, Mark van der Linden, Anette Siedler, Michael Tosckke, Rüdiger von Kries. Effectiveness of the 7-valent pneumococcal conjugate vaccine in German children, 2003-2005. DGHM/VAAM- Göttingen Jahrestagung. Germany, 25-28 Sept. 2005. Poster PIP002.
- 77- Christiane Heeg, Mark van der Linden, Adnan Al-Lahham and Ralf René Reinert. Phenotypic and genotypic (MLST) characterization of atypical *Streptococcus pneumoniae* strains. DGHM/VAAM- Göttingen Jahrestagung. Germany, 25-28 Sept. 2005. Poster PIP011.
- 78- Ralf René Reinert, Christiane Heeg, Adnan Al-Lahham, Mark van der Linden and Rudolf Lütticken. Annual Report of the National Reference Center for Streptococci, 2004. DGHM/VAAM- Göttingen Jahrestagung. Germany, 25-28 Sept. 2005. Poster RKP005.
- 79- Adnan Al-Lahham and Ralf René Reinert. Molecular characterization of telithromycin-resistant clinical isolates of *Streptococcus pneumoniae* from Europe and time-kill kinetics

- with telithromycin. 7th European Congress of Chemotherapy and Infection. October 19-22, 2005 Palazzo dei Congressi and Palaffara, Florence, Italy. Poster 62.
- 80- Ralf René Reinert, Christiane Heeg, Mark van der Linden, Adnan Al-Lahham. Characterization of Fluoroquinolone-resistant *Streptococcus pneumoniae* clinical isolates from Europe. . 7th European Congress of Chemotherapy and Infection. October 19-22, 2005 Palazzo dei Congressi and Palaffara, Florence, Italy. Poster 61.
- 81- Al-Lahham, A. and Reinert, R.R.. 2005. Molecular Characterization and time-kill kinetics of *S. pneumoniae* isolates with reduced susceptibility to telithromycin. Abstract C1-1418: In: Program and abstracts of 45th Interscience Conference on Antimicrobial Agents and Chemotherapy, Dec. 16 – 19; 2005, Washington DC, USA, American Society for Microbiology, Washington, DC, USA.
- 82- A. Al-Lahham, M.R. Jacobs, P.C. Appelbaum, S. Bajakouzian, S. Cordeiro, M. Van der Linden, R. R. Reinert. Molecular Characterization of multiply-resistant *Streptococcus pneumoniae* isolated in South Africa in 1977-1978. In: Program and abstracts of 45th Interscience Conference on Antimicrobial Agents and Chemotherapy, Dec. 16 – 19; 2005, Washington DC, USA, American Society fro Microbiology, Washington, DC, USA.
- 83- Grudinina, S. A., Ilina, E. N., Filimonova, O. Y., Al-Lahham, A., Malakhova, M. V., Sidorenko, S. V., and Reinert, R. R. Characterization of macrolide resistant *Streptococcus pneumoniae* isolates from Russia. 2006. 16th European Congress of Clinical Microbiology and Infectious Diseases. Nice-France, 1-4 April 2006. Poster **ECCMID**
- 84- Van der Linden, M. P. G., Al-Lahham, A. and Reinert, R.R. 2006. Invasive pneumococcal disease in adults in North-Rhine Westphalia, Germany, 2001-2004. 16th European Congress of Clinical Microbiology and Infectious Diseases. Nice-France, 1-4 April 2006. Poster. **ECCMID**
- 85- Al-Lahham, A., Van der Linden, M. P. G., and Reinert, R.R. 2006. Resistance mechanisms of telithromycin resistant clinical isolates of *Streptococcus pneumoniae* in Europe. 2006. 16th European Congress of Clinical Microbiology and Infectious Diseases. Nice-France, 1-4 April 2006. P 1595. **ECCMID**
- 86- Al-Lahham, A. 2006. Resistance of *Streptococcus pneumoniae* to ketolides. 12th Scientific Meeting of the European Society of Chemotherapy. Aachen, Germany. March 16-19, 2006. Presentation date 17.03.2006. V08. Invited Speaker.

- 87- Seegmüller, I, van der Linden, M. P. G., Al-Lahham, A., and Reinert R. R. Invasive pneumococcal disease in adults in North-Rhine Westphalia, Germany, 2001-2004. 12th Scientific Meeting of the European Society of Chemotherapy. Aachen, Germany. March 16-19, 2006. P39
- 88- Arenz, S., Kalies, H., Toschke, A. M., von Kries, R., Siedler, A., Al-Lahham, A., Reinert, R. R. Implementation of a 7-valent pneumococcal vaccination program in Germany based on an at risk strategy. 12th Scientific Meeting of the European Society of Chemotherapy. Aachen, Germany. March 16-19, 2006. P42
- 89- Grudinina, S., Ilina, E., Filimonova, O., Al-Lahham. A., Malachova, M., Stolyarova,, L., Sidorenko, S., Reinert R. R. High prevalence of *ermB/ mefA* positive isolates among macrolide resistant *Streptococcus pneumoniae* in Russia. 12th Scientific Meeting of the European Society of Chemotherapy. Aachen, Germany. March 16-19, 2006. P47
- 90- Al-Lahham, A., Van der Linden, M. P. G., and Reinert, R.R. 2006. Biomedical instrumentation used for identification of ketolide resistance mechanisms of *Streptococcus pneumoniae*. International Medical Informatics and Biomedical Engineering. The first Jordanian European Symposium. IMIBE06. March, 20-22, 2006. Amman, Jordan. Invited Speaker.
- 91- Al-Lahham, A., Nicklas, W., and Reinert, RR. 2006. Isolation and characterization of *S. pneumoniae* strains from animal models. 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD), 2 – 6 April 2006. Alice Springs Convention Centre, Alice Springs, Central Australia. PO 9.03. Paper number 334.
- 92- Al-Lahham, A., van der Linden, M., and Reinert, RR. 2006. Telithromycin resistance in clinical isolates of pneumococci from Europe: Resistance mechanisms and time kill kinetics. 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD), 2 – 6 April 2006. Alice Springs Convention Centre, Alice Springs, Central stralia. PO 13.01. Paper number 6.00
- 93- Reinert, RR., Al-Lahham, A., Siedler, A., van der Linden, M., Toschke, AM., and von Kries, R. 2006. Invasive pneumococcal disease in German children vaccinated with pneumococcal vaccines. 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD), 2 – 6 April 2006. Alice Springs Convention Centre, Alice Springs, Central Australia. PO 4.15. Paper number 304.00

- 94- Reinert, RR., Al-Lahham, A., Siedler, A., van der Linden, M., Toschke, AM., and von Kries, R. 2006. Nation-wide study of IPD in the pediatric population of Germany (1997-2004): Incidence, epidemiology of resistance and coverage of PCV7. 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD), 2 – 6 April 2006. Alice Springs Convention Centre, Alice Springs, Central Australia. PO 10.18. Paper number 307.00
- 95- van der Linden, M.P.G., Al-Lahham, A., and Reinert, RR. 2006. Invasive pneumococcal disease in adults in North-Rhine Westphalia, Germany, 2001-2004. 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD), 2 – 6 April 2006. Alice Springs Convention Centre, Alice Springs, Central Australia. PO 3.59.
- 96- Arenz, S., Kalies, H., Toschke, A. M., Al-Lahham, A., Siedler, A., Reinert, R. R., and von Kries, R. 2006. Implementation of a 7-valent pneumococcal vaccination program in Germany based on an at risk strategy. 5th International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD), 2 – 6 April 2006. Alice Springs Convention Centre, Alice Springs, Central Australia. PO 10.15. Paper number 273.00
- 97- Arenz, S., Kalies, H., Toschke, A. M., Al-Lahham, A., Siedler, A., Reinert, R. R., and von Kries, R. 2006. Causes for a poor effectiveness of an at risk strategy for 7-valent pneumococcal vaccination in Germany. The 24th Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID). Basel, Switzerland. May, 3-5, 2006. Poster.
- 98- Reinert, RR., Al-Lahham, A., Siedler, A., van der Linden, M., Toschke, AM., and von Kries, R. 2006. Invasive pneumococcal disease in the pediatric population of Germany: Eight year nationwide surveillance, 1997-2004. The 24th Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID). Basel, Switzerland. May, 3-5, 2006. Poster.
- 99- van der Linden, M., Al-Lahham, A., Seegmüller, I., Nicklas W., and Reinert, R. R. 2006. Characterization of *Streptococcus pneumoniae* strains isolated from laboratory animals. 46th Annual Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, USA. September 27-30, 2006. Poster C2-1657.

- 100- van der Linden, M., Al-Lahham, A., Seegmüller, I., Heeg, C., and Reinert, R. R. 2006. In vitro activity of tigecycline (GAR-936) against antibiotic resistant *Streptococcus pneumoniae* in Germany. 46th Annual Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, USA. September 27-30, 2006. Poster E-741.
- 101- Ioanna, N. Grivea, Adnan Al-Lahham, George A. Syrogiannopoulos, Mark van der Linden, D. C. Chryssanthopoulou, G. D. Katapodis, and Ralf René Reinert. Susceptibility and mechanisms of resistance of macrolide resistant *Streptococcus pyogenes* (GAS) isolates from children with Tonsillopharyngitis (TP): The 2003-2005 Hellenic antibiotic-resistant respiratory pathogens (HARP) study. 46th Annual Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, USA. September 27-30, 2006. Poster. C2-202
- 102- Ralf René Reinert, Christiane Heeg, Adnan Al-Lahham, Mark van der Linden, Irene Seegmüller and Rudolf Lütticken. Annual Report of the National Reference Center for Streptococci, 2005. DGHM- Jahrestagung. Würzburg, Germany, 2-5 Oct. 2006. Presentation number RFV01-07 (B0188).
- 103- Adnan Al-Lahham, Christiane Heeg, Mark van der Linden, Irene Seegmüller, Ralf René Reinert. Characterisation of fluoroquinolone non-susceptible clinical isolates of *Streptococcus pneumoniae* in Germany: 1992-2005" - Poster Nr. P994. 25th International Congress of Chemotherapy and the 17th European Congress of Clinical Microbiology and Infectious Diseases (25th ICC and the 17th ECCMID 2007) in Munich-Germany.
- 104- Mark van der Linden, Adnan Al-Lahham, Irene Seegmüller, Werner Niklas, P. Kopp, and Ralf René Reinert. *Streptococcus pneumoniae* strains isolated from laboratory animals and pets. Poster Nr. P992. 25th International Congress of Chemotherapy and the 17th European Congress of Clinical Microbiology and Infectious Diseases (25th ICC and the 17th ECCMID 2007) in Munich-Germany.
- 105- I. N. GRIVEA¹, M. VAN DER LINDEN, M. PANAGIOTOU¹, A. G. TSANTOULI¹, A. AL-LAHHAM, G. A. SYROGIANNOPOULOS¹, R. R. REINERT. *emm* Types of *Streptococcus pyogenes* (GAS) Isolates from Greek Children with Tonsillopharyngitis: The Hellenic Antibiotic-Resistant Respiratory Pathogens (HARP) Study. 1Univ. of Thessaly, Sch. of Med., Larissa, Greece, 2Ist. for Med. Microbiol. and Natl. Reference Ctr. for Streptococci, Aachen, Germany. ICAAC 2007.
106. Chemotherapy Jordan 2008. lecture
107. Chemotherapy Libanon 2009. lecture

108. Adnan Al-Lahham, Rawaa Alkayali. 2009. Resistance patterns and risk factors of *Streptococcus pneumoniae* carriage in healthy Jordanian children. 49th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC). San Francisco, CA. 12-15 Sept. 2009. Poster number C2-1396.
109. A. Al-Lahham, J. Abu Qayyas, H. Khyami-Horani, R. Al-Kayali. 2010. COLONIZATION WITH STREPTOCOCCUS PNEUMONIAE AND COVERAGE OF THE PNEUMOCOCCAL CONJUGATE VACCINES AMONG JORDANIAN PEDIATRICS: RESULTS OF 3 STUDIES, 2005-2010. 26th International Pediatric Association Congress. Johannesburg, South Africa 3-9 August 2010. Poster 917
110. IBS in Italy. From High Council for Science and Technology. Nomination 13-19 Sept 2010.
111. Chemotherapy Syria 2010.lecture
112. A. Al-Lahham, J. Abu Qayyas, Mark van der Linden. 2011. Population based study on the impact of the PCV7 on nasopharyngeal carriage of *Streptococcus pneumoniae* in healthy Jordanian infants, 2009-2010. 29th ESPID, Den Haag, Netherlands, June, 7-11, 2011. Poster #
113. Lecture in a conference Middle East pneumococcal summit in Beirut 1.3.2012
114. Lecture and Press conference in Dubai 3rd AfME pneumococcal summit 28/29. 3.2012
115. First Workshop on the Prevenar 13 vaccination for adults (Pneumococcal conjugate vaccine). Le Meridian, Amman, 3.7. 2012.
116. Iraq Pneumococcal Disease Advisory Board, Sept. 25-26, 2012, Grand Hayat Hotel, Istanbul, Turkey. 2 lectures on *Streptococcus pneumoniae*
- Pneumococcal serotyping benefits and challenges
 - The Changing Epidemiology of Pneumococcal Disease and the need for Continuous Surveillance
117. TRIBE DEPENDENT PNEUMOCOCCAL SEROTYPE AND RESISTANCE DISTRIBUTION IN THE PEDIATRIC POPULATION OF JORDAN, 2008-2010. A. Al-Lahham¹, van der Linden M². 32nd Annual Meeting of the ESPID, Dublin, Ireland, May, 6-10, 2014. Poster # 390
118. Train the trainer in Luebeck-Germany from 21.7-21.8. 2014. Residency includes lecturing and research about biofilms. Biotechnology institute CIB.
119. **A. Al-Lahham, M. Al-Atrash, S. Munis and N. Khanfar. 2016. CARRIAGE OF *STREPTOCOCCUS PNEUMONIAE* IN THE PEDIATRIC POPULATION OF MADABA AND AMMAN, JORDAN. International Symposium for Pneumococci and Pneumococcal Disease (ISPPD). June 26-30, 2016 Glasgow, UK. Poster No: 315**

- 120. A. Al-Lahham, and N. Khanfar. 2016.** CARRIAGE OF *STREPTOCOCCUS PNEUMONIAE* IN THE PEDIATRIC POPULATION OF MADABA AND AMMAN, JORDAN. IMED 'International Meeting on Emerging Diseases and Surveillance'. **4-7 November 2016.** Vienna, Austria. **Poster No: 19.002**
- 121. A. Al-Lahham. 2018.** CARRIAGE OF *STREPTOCOCCUS PNEUMONIAE* IN AGES 2-4 YEARS IN THE WINTER SEASON OF 2017-2018 IN THE LOCAL CITIES OF JORDAN. 8-12 November 2018. Vienna, Austria. **Poster No: 20.022.**
- 122. A. Al-Lahham. 2019.** Tribes: A New Racial Disparity for Pneumococcal Serotype and Resistance Distribution in Jordan, 2008-2018. Amsterdam, Netherlands 12-16 April 2019. **Poster No: PO367.**
- 123. Adnan Al-Lahham.** PNEUMOCOCCAL VACCINE COVERAGE OF CARRIERS IN CHILDREN 2-4 YEARS OLD IN IRBID AND MADABA CITIES IN JORDAN. WSPID-manila, Philippines. Poster number **19-0367. 5-8 Nov. 2019.**
- 124. A. Al-Lahham, N. Alzu'bi, S. Alghoul, N. Albataina. 2020.** Nasopharyngeal carriage of *Staphylococcus aureus* in ages 2-4 years in the winter seasons of 2017-2019 in Jordan. Abstract tracking number: 2020-A-5849-Microbe. ASM Microbe 2020. Poster and oral presentation. Online conference due to the corona crisis

The following papers (also listed in the publications list) were done during my work at the National Reference Center for Streptococci in Aachen-Germany, and were related to co-supervising PhD of medical students, those with marked names in Bold

- Mark van der Linden, Adnan Al-Lahham, **Stefan Haupts**, and Ralf René Reinert. 2007. Clonal spread of *mef* positive macrolide-resistant *Streptococcus pneumoniae* in invasive disease in adults in Germany. **Antimicrob Agents and Chemother** **51**(5): 1830-1834.
- Christiana Heeg, **Carmen Franken**, Mark van der Linden, Adnan Al-Lahham and Ralf René Reinert. 2007. Genetic diversity of pneumococcal surface protein A in *Streptococcus pneumoniae* in Germany. **Vaccine**. **25**(6):1030-5.
- Ralf René Reinert, Susanne Reinert, **Murat Y Cil**, Mark van der Linden, Adnan Al-Lahham, Peter Appelbaum. 2005. Antimicrobial susceptibility of *Streptococcus pneumoniae* in eight European countries in 2001-2003: findings of the PNEUMOWORLD study. **Antimicrob Agents and Chemother**. **49**(7): 2903-2913.
- Ralf René Reinert, **Adrian Ringelstein**, Mark van der Linden, Murat Yücel Cil, Adnan Al-Lahham and Franz Josef Schmitz. 2005. Molecular epidemiology of macrolide-resistant *Streptococcus pneumoniae* isolates in Europe. **Journal of Clinical Microbiology**. **43**(3): 1294-1300.
- Ralf René Reinert, Rudolf Lütticken, Joyce A. Sutcliffe, Amelia Tait-Kamradt, Murat Y. Cil, **Holger M. Schorn**, André Bryskier, and Adnan Al-Lahham. 2004. Clonal relatedness of erythromycin-resistant *Streptococcus pyogenes* isolates in Germany. **Antimicrobial Agents and Chemotherapy**. **48**(4): 1369-1373.
- Reinert, R. R., **Muckel, S.**, Al-Lahham, A., Spratt, B. G., Brüggemann, A. B. , Hackenbeck, R., and Lütticken, R. 2003. Characterization of German penicillin non susceptible serotype 23F pneumococci using multilocus sequence typing. **J. Med. Microbiol**. **52**(pt11): 981-987.
- Ralf René Reinert, **Angela Wild**, Peter Appelbaum, Andre Bryskier, Rudolf Lütticken, Murat Yücel Cil, and Adnan Al-Lahham. 2003. Ribosomal mutations conferring resistance to macrolides in *Streptococcus pneumoniae* clinical strains isolated in Germany. **Antimicrobial Agents and Chemotherapy**. **47**(7): 2319-2322.
- Reinert, R. R., Al-Lahham, A., Lemperle, M., **Tenholte, C.**, Briefs, C., Haupts, S., Gerard, H. H. and Lütticken, R. 2001. Emergence of macrolide and penicillin resistance among invasive pneumococcal isolates in Germany. **J. Antimicrob. Chemother**. **49**(1): 61-68.

- Reinert, R. R., **Simic, S.**, Al-Lahham, A., Reinert, S., Lemperle, M. and Lütticken, R. 2001. Antimicrobial resistance of *Streptococcus pneumoniae* recovered from outpatients with respiratory tract infections in Germany from 1998 to 1999: Results of a national surveillance study. **J. Clinical Microbiology.** **39**(3): 1187-1189.