

## List of Publications - Annelies S. Zinkernagel

### Peer Reviewed Original Articles:

1. Plate A, Anagnostopoulos A, Glanzmann J, Stadler L, Weigelt L, Sutter R, Kästli M, Zinkernagel AS, Zingg PO, Achermann Y. Synovial C-reactive protein features high negative predictive value but is not useful as a single diagnostic parameter in suspected periprosthetic joint infection (PJI). *J Infect.* 2019 Jun;78(6):439-444. doi: 10.1016/j.jinf.2019.04.003
2. Dengler Haunreiter V, Boumasmoud M\*, Häffner N\*, Wipfli D, Leimer N, Rachmühl C, Kühnert D, Achermann Y, Zbinden R, Benussi S, Vulin C, **Zinkernagel AS**. In-host evolution of *Staphylococcus epidermidis* in a pacemaker-associated endocarditis resulting in increased antibiotic tolerance. \*these authors contributed equally  
*Nature communications* 2019 10:1149 | <https://doi.org/10.1038/s41467-019-09053-9>
3. Keller N, Woytschak J, Heeb LE, Maggio EM, Shambat SM, Snäll J, Hyldegaard O, Boyman O, Norrby-Teglund A, **Zinkernagel AS**. Group A streptococcal DNase Sda1 impairs plasmacytoid dendritic cell's type I interferon response. *J Invest Dermatol.* 2018 Dec 10. PMID: 30543898
4. Seijsing J, Sobieraj AM, Keller N, Shen Y, **Zinkernagel AS**, Loessner MJ, Schmelcher M. Improved Biodistribution and Extended Serum Half-Life of a Bacteriophage Endolysin by Albumin Binding Domain Fusion. *Front Microbiol.* 2018 Nov 27;9:2927. doi: 10.3389/fmicb.2018.02927. eCollection 2018. PMID: 30538696
5. Andreoni F, Toyofuku M, Menzi C, Kalawong R, Mairpady Shambat S, François P, **Zinkernagel AS\***, Eberl L\*. Antibiotics stimulate vesicles formation in *Staphylococcus aureus* in a phage-dependent and independent fashion and via different routes.  
\* these authors contributed equally *Antimicrob Agents Chemother.* 2018 Dec 3. pii: AAC.01439-18. doi: 10.1128/AAC.01439-18. PMID: 30509943
6. Achermann Y, **Zinkernagel AS**. Identifying the Pathogen by Multiplex Polymerase Chain Reaction in Bone and Joint Infections: Challenges and Future. *J Rheumatol.* 2018 Nov;45(11):1497-1500. Epub 2018 Nov 1. PMID: 30385695
7. Kalt F, Schulthess B, Sidler F, Herren S, Fucentese SF, Zingg PO, Berli M, **Zinkernagel AS**, Zbinden R, Achermann Y. *Corynebacterium* species rarely cause orthopedic infections. *J Clin Microbiol.* 2018 Oct 10. pii: JCM.01200-18. doi: 10.1128/JCM.01200-18.
8. Vulin C, Leimer N, Huemer M, Ackermann M\*, **Zinkernagel AS\***. Prolonged bacterial lag time results in small colony variants that represent a sub-population of persisters  
\* these authors contributed equally. *Nature communications* 2018 Oct 4;9(1):4074. doi: 10.1038/s41467-018-06527-0. PMID: 30287875
9. Tarnutzer A, Andreoni F, Keller N, Zürcher C, Norrby-Teglund A, Schuepbach R, **Zinkernagel AS**. Human polyspecific immunoglobulin attenuates group A streptococcal virulence factor activity and reduces disease severity in a murine necrotizing fasciitis model. *Clin Microbiol Infect.* 2018 Jul 16. pii: S1198-743X(18)30522-6. doi: 10.1016/j.cmi.2018.07.007. PMID:30025835

10. Ajdler-Schaeffler E, Scherrer AU, Keller PM, Anagnostopoulos A, Hofmann M, Rancic Z, **Zinkernagel AS**, Bloemberg GV, Hasse BK. and the VASGRA Cohort. Increased Pathogen Identification in Vascular Graft Infections by the Combined Use of Tissue Cultures and 16S rRNA Gene Polymerase Chain Reaction. *Front Med (Lausanne)*. 2018 Jun 4;5:169. doi: 10.3389/fmed.2018.00169. eCollection 2018.PMID:29915786
11. Keller N, Andreoni F, Reiber C, Luethi-Schaller H, Schuepbach RA, Moch H, Marques Maggio E\*, **Zinkernagel AS\***. Human Streptococcal Necrotizing Fasciitis Histopathology Mirrored in a Murine Model. *Am J Pathol*. 2018 Jul;188(7):1517-1523. doi: 10.1016/j.ajpath.2018.03.009. Epub 2018 Apr 22. PMID:29684366 \* these authors contributed equally
12. Plate A, Stadler L, Sutter R, Anagnostopoulos A, Frustaci D, Zbinden R, Fucentese SF, **Zinkernagel AS**, Zingg PO, Achermann Y. Inflammatory disorders mimicking periprosthetic joint infections may result in false positive  $\alpha$ -defensin. *Clin Microbiol Infect*. 2018 Feb 26. pii: S1198-743X(18)30194-0. doi: 10.1016/j.cmi.2018.02.019. PMID: 29496595
13. Anagnostopoulos A, Bossard DA, Ledergerber B, Zingg PO, **Zinkernagel AS**, Gerber C, Achermann Y. Perioperative antibiotic prophylaxis has no effect on time to positivity and proportion of positive samples: a cohort study of 64 *Cutibacterium acnes* bone and joint infections. *J Clin Microbiol*. 2018 Jan 24;56(2). pii: e01576-17. doi: 10.1128/JCM.01576-17.
14. Seidl K, Leemann M, **Zinkernagel AS**. The ArlRS two-component system is a regulator of *Staphylococcus aureus*-induced endothelial cell damage. *Eur J Clin Microbiol Infect Dis*. 2018 Feb;37(2):289-292. doi: 10.1007/s10096-017-3130-5. Epub 2017 Nov 27. PMID: 29177635
15. Andreoni F, Ugolini F, Keller N, Neff A, Nizet V, Hollands A, Marques Maggio E, **Zinkernagel AS\***, Schuepbach RA\*. Immunoglobulin attenuates streptokinase-mediated virulence in *Streptococcus dysgalactiae* subsp. *equisimilis* necrotizing fasciitis. *J Infect Dis*. 2018 Jan 4;217(2):270-279. doi: 10.1093/infdis/jix560. PMID 29099935.  
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16. Achermann Y, Liu J, Zbinden R, Zingg PO, Anagnostopoulos A, Barnard E, Sutter R, Li H, McDowell A, **Zinkernagel AS**. *Propionibacterium avidum* - a virulent pathogen causing hip periprosthetic joint infection. *Clin Infect Dis*. 2018 Jan 6;66(1):54-63. doi: 10.1093/cid/cix665. PMID 29020266 *Clin Infect Dis*. 2017 Aug 2. doi: 10.1093/cid/cix665.
17. Wilk CM, Weber I, Seidl K, Rachmühl C, Holzmann-Bürgel A, Müller AMS, Kuster SP, Schanz U, **Zinkernagel AS**. Impact of oral gut decontamination on *staphylococcus aureus* colonization in patients undergoing allogeneic hematopoietic stem cell transplantation. *Int J Antimicrob Agents*. 2017 Aug 7. pii: S0924-8579(17)30300-X. doi: 10.1016/j.ijantimicag.2017.08.008. PMID: 28797807
18. Matt U, Selchow P, Dal Molin M, Strommer S, Sharif O, Schilcher K, Andreoni F, Stenzinger A, **Zinkernagel AS**, Zeitlinger M, Sander P, Nemeth J. Chloroquine enhances the antimycobacterial activity of isoniazid and pyrazinamide by reversing inflammation-induced macrophage efflux. *Int J Antimicrob Agents*. 2017 Jul;50(1):55-62. doi: 10.1016/j.ijantimicag.2017.02.022. Epub 2017 May 12. PMID: 28506804

19. Seidl K, Leemann M, Palheiros Marques M, Rachmühl C, Leimer N, Andreoni F, Achermann Y, **Zinkernagel AS**. High level methicillin resistance correlates with reduced Staphylococcus aureus endothelial cell damage; *Int J Med Microbiol*. 2017 Jan;307(1):11-20. doi: 10.1016/j.ijmm.2016.11.009. Epub 2016 Nov 30.
20. Schilcher K, Andreoni F, Dengler Haunreiter V, Seidl K, Hasse B, **Zinkernagel AS**. Modulation of Staphylococcus aureus biofilm matrix by subinhibitory concentrations of clindamycin. *Antimicrobial Agents and Chemotherapy*. 25 July 2016, doi: 10.1128/AAC.00463-16
21. Woytschak J, Keller N, Krieg C, Impellizzeri D, Thompson RW, Wynn TA, **Zinkernagel AS**, Boyman O. Type 2 Interleukin-4 Receptor Signaling in Neutrophils Antagonizes Their Expansion and Migration during Infection and Inflammation. *Immunity*. 2016 Jul 19;45(1):172-84. doi: 10.1016/j.immuni.2016.06.025
22. Scherrer AU, Bloemberg G, Zbinden R, **Zinkernagel AS**, Fuchs C, Frauenfelder S, Rancic Z, Mayer D, Hasse B; VASGRA Cohort. Prosthetic vascular graft infections: bacterial cultures from negative pressure wound therapy foams do not improve diagnostics. *J Clin Microbiol*. 2016 Jun 1. pii: JCM.01102-16.
23. Andreoni F, Zürcher C, Tarnutzer A, Schilcher K, Neff A, Keller N, Maggio EM, Poyart C, Schuepbach R, **Zinkernagel A**. Clindamycin Affects Group A Streptococcus Virulence Factors and Improves Clinical Outcome. *J Infect Dis*. 2016 May 30. pii: jiw229.
24. Uchiyama S, Keller N, Schlaepfer E, Grube C, Schuepbach RA, Speck RF, **Zinkernagel AS**. Interferon  $\alpha$ -Enhanced Clearance of Group A Streptococcus Despite Neutropenia. *J Infect Dis*. 2016. doi: 10.1093/infdis/jiw157. First published online: April 18, 2016
25. Hepatitis C- working group for COHERE in Eurocoord, Smit C, Arends J, Peters L, Montforte Ad, Dabis F, Zangerle R, Daikos G, Mussini C, Mallolas J, de Wit S, **Zinkernagel A**, Cosin J, Chene G, Raben D, Rockstroh J. Effect of abacavir on sustained virologic response to HCV treatment in HIV/HCV co-infected patients, Cohere in Eurocoord. *BMC Infect Dis*. 2015 Nov 4;15:498. doi: 10.1186/s12879-015-1224-1.
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28. Achermann Y, Seidl K, Kuster SP, Leimer N, Durisch N, Ajdler-Schäffler E, Karrer S, Senn G, Holzmann-Bürgel A, Wolfensberger A, Leone A, Arlettaz R, **Zinkernagel AS\***, Sax H\*. Epidemiology of Methicillin-Susceptible Staphylococcus aureus in a Neonatology Ward. *Infect Control Hosp Epidemiol*. 2015 Aug 20:1-8. [Epub ahead of print] PMID: 26290400  
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29. Leimer N, Rachmühl C, Palheiros Marques M, Bahlmann AS, Furrer A, Eichenseher F, Seidl K, Matt U, Loessner MJ, Schuepbach RA\*, **Zinkernagel AS\***. Non-stable Staphylococcus aureus small colony variants are induced by low pH and sensitized to

- antimicrobial therapy by phagolysosomal alkalization. *J Infect Dis.* 2015 Jul 17. pii: jiv388. [Epub ahead of print] \* these authors contributed equally
30. Milleret V, Buzzi S, Gehrig P, Ziogas A, Grossmann J, Schilcher K, **Zinkernagel AS**, Zucker A, Ehrbar M. Protein adsorption steers blood contact activation on engineered cobalt chromium alloy oxide layers. *Acta Biomater.* 2015 Jun 20. pii: S1742-7061(15)00289-5. doi: 10.1016/j.actbio.2015.06.020. [Epub ahead of print]
  31. Seidl K, Leimer N, Palheiros Marques M, Furrer A, Holzmann-Bürgel A, Senn G, Zbinden R, **Zinkernagel AS**. Clonality and antimicrobial susceptibility of methicillin-resistant *Staphylococcus aureus* at the University Hospital Zurich, Switzerland between 2012 and 2014. *Ann Clin Microbiol Antimicrob.* 2015 Mar 19;14:14. doi: 10.1186/s12941-015-0075-3.
  32. Shalova IN, Lim JY, Chittezhath M, **Zinkernagel AS**, Beasley F, Hernández-Jiménez E, Toledano V, Cubillos-Zapata C, Rapisarda A, Chen J, Duan K, Yang H, Poidinger M, Melillo G, Nizet V, Arnalich F, López-Collazo E, Biswas SK. Human Monocytes Undergo Functional Re-programming during Sepsis Mediated by Hypoxia-Inducible Factor-1 $\alpha$ . *Immunity.* 2015 Mar 17;42(3):484-98. doi: 10.1016/j.immuni.2015.02.001.
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  34. Andreoni F, Ogawa T, Ogawa M, Madon J, Uchiyama S, Schuepbach RA, **Zinkernagel AS**. The IL-8 protease SpyCEP is detrimental for Group A *Streptococcus* host-cells interaction and biofilm formation. *Front Microbiol.* 2014 Jul 10;5:339. doi: 10.3389/fmicb.2014.00339. eCollection 2014
  35. Osterhoff G, Spirig J, Klasen J, Kuster SP, **Zinkernagel AS**, Sax H, Min K. Perforation and Bacterial Contamination of Microscope Covers in Lumbar Spinal Decompressive Surgery. *Med Princ Pract.* 2014 Jun 4. [Epub ahead of print] PMID 24903448
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## Letters:

75. Scudeller L, Rodríguez-Baño J, **Zinkernagel A**, Tacconelli E, Akova M, Friedrich AW, Sanguinetti M, Paul M, Poljak M. ESCMID white paper: a guide on ESCMID guidance documents. *Clin Microbiol Infect.* 2018 Aug 23. pii: S1198-743X(18)30577-9. doi: 10.1016/j.cmi.2018.08.005. [Epub ahead of print] PMID:30145398
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cross-border collaboration and education to improve patient care. *Clin Microbiol Infect.* 2017 Jun 2. pii: S1198-743X(17)30284-7. doi: 10.1016/j.cmi.2017.05.024. PMID: 28583741

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### Case Reports:

79. Adamo S, Gian Vital D, **Zinkernagel AS**, Kollias S, Steiner UC. Carotidynie: eine seltene Manifestation einer nicht so seltenen Erkrankung. *Praxis (Bern 1994).* 2017 Nov;106(24):1350-1353. doi: 10.1024/1661-8157/a002837. German. PMID: 29183214
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