

REFERENCES

- Abisado, R. G., Benomar, S., Klaus, J. R., Dandekar, A. A., & Chandler, J. R. (2018). Bacterial Quorum Sensing and Microbial Community Interactions. *MBio*, *9*(3).
<https://doi.org/10.1128/mBio.02331-17>
- Berical, A. C., Harris, D., Dela Cruz, C. S., & Possick, J. D. (2016). Pneumococcal Vaccination Strategies. An Update and Perspective. *Annals of the American Thoracic Society*, *13*(6), 933–944.
<https://doi.org/10.1513/AnnalsATS.201511-778FR>
- Bogaardt, C., van Tonder, A. J., & Brueggemann, A. B. (2015). Genomic analyses of pneumococci reveal a wide diversity of bacteriocins – including pneumocyclacin, a novel circular bacteriocin. *BMC Genomics*, *16*(1), 554. <https://doi.org/10.1186/s12864-015-1729-4>
- Brooks, L. R. K., & Mias, G. I. (2018). Streptococcus pneumoniae's Virulence and Host Immunity: Aging, Diagnostics, and Prevention. *Frontiers in Immunology*, *9*.
<https://doi.org/10.3389/fimmu.2018.01366>
- Brooks, W. A. (2020). Bacterial Pneumonia. In E. T. Ryan, D. R. Hill, T. Solomon, N. E. Aronson, & T. P. Endy (Eds.), *Hunter's Tropical Medicine and Emerging Infectious Diseases (Tenth Edition)* (10th ed., pp. 446–453). Elsevier. <https://doi.org/10.1016/B978-0-323-55512-8.00042-9>
- Chavis, S., & Ganesh, N. (2020). Respiratory Hygiene and Cough Etiquette. In *Infection Control in the Dental Office* (pp. 91–103). Springer International Publishing. https://doi.org/10.1007/978-3-030-30085-2_7
- Dadonaite, B., & Roser, M. (2020). Pneumonia. *Our World in Data*.
<https://ourworldindata.org/pneumonia>
- Daniels, C. C., Rogers, P. D., & Shelton, C. M. (2016). A Review of Pneumococcal Vaccines: Current

Polysaccharide Vaccine Recommendations and Future Protein Antigens. *The Journal of Pediatric Pharmacology and Therapeutics*, 21(1), 27–35. <https://doi.org/10.5863/1551-6776-21.1.27>

Dasgupta, A. (2012). *Advances in antibiotic measurement* (pp. 75–104). <https://doi.org/10.1016/B978-0-12-394317-0.00013-3>

Douglas, C. W. I., Heath, J., Hampton, K. K., & Preston, F. E. (1993). Identity of viridans streptococci isolated from cases of infective endocarditis. *Journal of Medical Microbiology*, 39(3), 179–182. <https://doi.org/10.1099/00222615-39-3-179>

Grabenstein, J. D., & Musher, D. M. (2018). Pneumococcal Polysaccharide Vaccines. In *Plotkin's Vaccines* (pp. 816-840.e13). Elsevier. <https://doi.org/10.1016/B978-0-323-35761-6.00046-8>

Gray, B. M., & Musher, D. M. (2008). The History of Pneumococcal Disease. In *Pneumococcal Vaccines* (pp. 3–17). American Society of Microbiology. <https://doi.org/10.1128/9781555815820.ch1>

Hadinegoro, S. R., Prayitno, A., Khoeri, M. M., Djelantik, I. G. G., Dewi, N. E., Indriyani, S. A. K., Muttaqin, Z., Mudaliana, S., & Safari, D. (2016). NASOPHARYNGEAL CARRIAGE OF STREPTOCOCCUS PNEUMONIAE IN HEALTHY CHILDREN UNDER FIVE YEARS OLD IN CENTRAL LOMBOK REGENCY, INDONESIA. *The Southeast Asian Journal of Tropical Medicine and Public Health*, 47(3), 485–493. <http://www.ncbi.nlm.nih.gov/pubmed/27405132>

Heather, J. M., & Chain, B. (2016). The sequence of sequencers: The history of sequencing DNA. *Genomics*, 107(1), 1–8. <https://doi.org/10.1016/j.ygeno.2015.11.003>

Henriques-Normark, B., & Tuomanen, E. I. (2013). The Pneumococcus: Epidemiology, Microbiology, and Pathogenesis. *Cold Spring Harbor Perspectives in Medicine*, 3(7), a010215–a010215. <https://doi.org/10.1101/cshperspect.a010215>

- Herzog, T., & Uhl, W. (2014). Multidrug-Resistant Bacteria in Pancreatic Surgery. In *Microbiology for Surgical Infections* (pp. 61–76). Elsevier. <https://doi.org/10.1016/B978-0-12-411629-0.00004-0>
- Hibbing, M. E., Fuqua, C., Parsek, M. R., & Peterson, S. B. (2010). Bacterial competition: surviving and thriving in the microbial jungle. *Nature Reviews Microbiology*, *8*(1), 15–25.
<https://doi.org/10.1038/nrmicro2259>
- Hockett, K. L., & Baltrus, D. A. (2017). Use of the Soft-agar Overlay Technique to Screen for Bacterially Produced Inhibitory Compounds. *Journal of Visualized Experiments*, *119*.
<https://doi.org/10.3791/55064>
- Imhof, A. (2005). *Miscellaneous antibacterial drugs* (pp. 274–293). [https://doi.org/10.1016/S0378-6080\(05\)80448-9](https://doi.org/10.1016/S0378-6080(05)80448-9)
- Kadri, K. (2020). Polymerase Chain Reaction (PCR): Principle and Applications. In *Synthetic Biology - New Interdisciplinary Science*. IntechOpen. <https://doi.org/10.5772/intechopen.86491>
- Kim, Y. K., LaFon, D., & Nahm, M. H. (2016). Indirect Effects of Pneumococcal Conjugate Vaccines in National Immunization Programs for Children on Adult Pneumococcal Disease. *Infection & Chemotherapy*, *48*(4), 257. <https://doi.org/10.3947/ic.2016.48.4.257>
- Kumar, P. (2017). Pharmacology of Specific Drug Groups. In *Pharmacology and Therapeutics for Dentistry* (pp. 457–487). Elsevier. <https://doi.org/10.1016/B978-0-323-39307-2.00033-3>
- Lux, T., Nuhn, M., Hakenbeck, R., & Reichmann, P. (2007). Diversity of Bacteriocins and Activity Spectrum in *Streptococcus pneumoniae*. *Journal of Bacteriology*, *189*(21), 7741–7751.
<https://doi.org/10.1128/JB.00474-07>
- Maricic, N., & Dawid, S. (2014). Using the Overlay Assay to Qualitatively Measure Bacterial Production of and Sensitivity to Pneumococcal Bacteriocins. *Journal of Visualized Experiments*,

91. <https://doi.org/10.3791/51876>

Matsumoto-Nakano, M., & Kuramitsu, H. K. (2006). Role of Bacteriocin Immunity Proteins in the Antimicrobial Sensitivity of *Streptococcus mutans*. *Journal of Bacteriology*, *188*(23), 8095–8102. <https://doi.org/10.1128/JB.00908-06>

Maxam, A. M., & Gilbert, W. (1977). A new method for sequencing DNA. *Proceedings of the National Academy of Sciences*, *74*(2), 560–564. <https://doi.org/10.1073/pnas.74.2.560>

Meade, Slattery, & Garvey. (2020). Bacteriocins, Potent Antimicrobial Peptides and the Fight against Multi Drug Resistant Species: Resistance Is Futile? *Antibiotics*, *9*(1), 32. <https://doi.org/10.3390/antibiotics9010032>

Mehtälä, J., Antonio, M., Kaltoft, M. S., O'Brien, K. L., & Auranen, K. (2013). Competition Between *Streptococcus Pneumoniae* Strains. *Epidemiology*, *24*(4), 522–529. <https://doi.org/10.1097/EDE.0b013e318294be89>

Murray, P. R., Rosenthal, K. S., & Pfaller, M. A. (2013). *Medical Microbiology* (6th ed.). Elsevier/Saunders.

O'Donnell, J. A., Gelone, P. S., & Safdar, A. (2015). *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases (Eighth Edition)* (pp. 452-462.e2). <https://doi.org/https://doi.org/10.1016/C2012-1-00075-6>

Oliver, M. B., & Swords, W. E. (2015). Pneumococcal Biofilms and Bacterial Persistence During Otitis Media Infections. In *Streptococcus Pneumoniae* (pp. 293–308). Elsevier. <https://doi.org/10.1016/B978-0-12-410530-0.00016-8>

Pai, R., Gertz, R. E., & Beall, B. (2006). Sequential multiplex PCR approach for determining capsular serotypes of *Streptococcus pneumoniae* isolates. *Journal of Clinical Microbiology*, *44*(1), 124–

131. <https://doi.org/10.1128/JCM.44.1.124-131.2006>

Papadatou, I., Tzovara, I., & Licciardi, P. (2019). The Role of Serotype-Specific Immunological Memory in Pneumococcal Vaccination: Current Knowledge and Future Prospects. *Vaccines*, 7(1), 13. <https://doi.org/10.3390/vaccines7010013>

Parente, D. M., & Laplante, K. L. (2017). Glycopeptides. In *Infectious Diseases* (pp. 1249-1255.e2). Elsevier. <https://doi.org/10.1016/B978-0-7020-6285-8.00145-3>

Patel, S., Preuss, C., & Bernice, F. (2020). *Vancomycin*. Treasure Island (FL): StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK459263/>

Sandgren, A., Albiger, B., Orihuela, C. J., Tuomanen, E., Normark, S., & Henriques-Normark, B. (2005). Virulence in Mice of Pneumococcal Clonal Types with Known Invasive Disease Potential in Humans. *The Journal of Infectious Diseases*, 192(5), 791–800. <https://doi.org/10.1086/432513>

Shanker, E., & Federle, M. (2017). Quorum Sensing Regulation of Competence and Bacteriocins in *Streptococcus pneumoniae* and *mutans*. *Genes*, 8(1), 15. <https://doi.org/10.3390/genes8010015>

Son, M. R., Shchepetov, M., Adrian, P. V., Madhi, S. A., de Gouveia, L., von Gottberg, A., Klugman, K. P., Weiser, J. N., & Dawid, S. (2011). Conserved Mutations in the Pneumococcal Bacteriocin Transporter Gene, *blpA*, Result in a Complex Population Consisting of Producers and Cheaters. *MBio*, 2(5). <https://doi.org/10.1128/mBio.00179-11>

Song, J. Y., Nahm, M. H., & Moseley, M. A. (2013). Clinical Implications of Pneumococcal Serotypes: Invasive Disease Potential, Clinical Presentations, and Antibiotic Resistance. *Journal of Korean Medical Science*, 28(1), 4. <https://doi.org/10.3346/jkms.2013.28.1.4>

Swetwivathana, A., & Visessanguan, W. (2015). Potential of bacteriocin-producing lactic acid

- bacteria for safety improvements of traditional Thai fermented meat and human health. *Meat Science*, 109, 101–105. <https://doi.org/10.1016/j.meatsci.2015.05.030>
- Tai, S. (2016). Streptococcus pneumoniae Serotype Distribution and Pneumococcal Conjugate Vaccine Serotype Coverage among Pediatric Patients in East and Southeast Asia, 2000–2014: a Pooled Data Analysis. *Vaccines*, 4(1), 4. <https://doi.org/10.3390/vaccines4010004>
- Valente, C., Dawid, S., Pinto, F. R., Hinds, J., Simões, A. S., Gould, K. A., Mendes, L. A., de Lencastre, H., & Sá-Leão, R. (2016). The blp Locus of Streptococcus pneumoniae Plays a Limited Role in the Selection of Strains That Can Cocolonize the Human Nasopharynx. *Applied and Environmental Microbiology*, 82(17), 5206–5215. <https://doi.org/10.1128/AEM.01048-16>
- Watson, D. A., Musher, D. M., Jacobson, J. W., & Verhoef, J. (1993). A Brief History of the Pneumococcus in Biomedical Research: A Panoply of Scientific Discovery. *Clinical Infectious Diseases*, 17(5), 913–924. <https://doi.org/10.1093/clinids/17.5.913>
- Westerink, M. A. J., Schroeder, H. W., & Nahm, M. H. (2012). Immune Responses to pneumococcal vaccines in children and adults: Rationale for age-specific vaccination. *Aging and Disease*, 3(1), 51–67. <http://www.ncbi.nlm.nih.gov/pubmed/22500271>
- Wholey, W., Abu-Khdeir, M., Yu, E. A., Siddiqui, S., Esimai, O., & Dawid, S. (2019). Characterization of the Competitive Pneumocin Peptides of Streptococcus pneumoniae. *Frontiers in Cellular and Infection Microbiology*, 9. <https://doi.org/10.3389/fcimb.2019.00055>
- Wholey, W., Kochan, T. J., Storck, D. N., & Dawid, S. (2016). Coordinated Bacteriocin Expression and Competence in Streptococcus pneumoniae Contributes to Genetic Adaptation through Neighbor Predation. February. <https://doi.org/10.1371/journal.ppat.1005413>
- Yildirim, I., Shea, K. M., & Pelton, S. I. (2015). Pneumococcal Disease in the Era of Pneumococcal Conjugate Vaccine. *Infectious Disease Clinics of North America*, 29(4), 679–697.

<https://doi.org/10.1016/j.idc.2015.07.009>