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Thema: Fusobacterium nucleatum. Target des nichtinstrumentellen parodontalen Biofilmmmanagements

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Literatur

- 1 Ali Mohammed MM, Nerland AH, Al-Haroni M, Bakken V. Characterization of extracellular polymeric matrix, and treatment of *Fusobacterium nucleatum* and *Porphyromonas gingivalis* biofilms with DNase I and proteinase K. *J Oral Microbiol.* 2013;5.
- 2 Apatzidou DA. Modern approaches to non-surgical biofilm management. *Front Oral Biol.* 2012;15:99-116.
- 3 Armstrong WG. Origin and nature of the acquired pellicle. *Proc R Soc Med.* 1968 Sep;61(9):923-30.
- 4 Arweiler NB, Netuschil L. The Oral Microbiota. *Adv Exp Med Biol.* 2016;902:45-60.
- 5 Ben Lagha A, Dudonné S, Desjardins Y, Grenier D. Wild Blueberry (*Vaccinium angustifolium* Ait.) Polyphenols Target *Fusobacterium nucleatum* and the Host Inflammatory Response: Potential Innovative Molecules for Treating Periodontal Diseases. *J Agric Food Chem.* 2015 Aug 12;63(31):6999-7008.
- 6 Ben Lagha A, Haas B, Grenier D. Tea polyphenols inhibit the growth and virulence properties of *Fusobacterium nucleatum*. *Sci Rep.* 2017 Mar 21;7:44815.
- 7 Donlan RM, Costerton JW. Biofilms: survival mechanisms of clinically relevant microorganisms. *Clin Microbiol Rev.* 2002 Apr 15(2):167-93.
- 8 Feres M, Cortelli SC, Figueiredo LC, Haffajee AD, Socransky SS. Microbiological basis for periodontal therapy. *J Appl Oral Sci.* 2004 Dec;12(4):256-66.
- 9 Gurenlian J.R. The Role of Dental Plaque Biofilm in Oral Health. *J Dent Hygiene.* 2007 Oct;81(5):1-11.
- 10 Haag PA, Steiger-Ronay V, Schmidlin PR. The in Vitro Antimicrobial Efficacy of PDT against Periodontopathogenic Bacteria. *Int J Mol Sci.* 2015 Nov 13;16(11):27327-38.
- 11 Haffajee AD, Socransky SS, Patel MR, Song X. Microbial complexes in supragingival plaque. *Oral Microbiol Immunol.* 2008 Jun;23(3):196-205.
- 12 Hajishengallis G. Immunomicrobial pathogenesis of periodontitis: keystones, pathobionts, and host response. *Trends Immunol.* 2014 Jan;35(1):3-11.
- 13 Han YW. *Fusobacterium nucleatum*: a commensal-turned pathogen. *Curr Opin Microbiol.* 2015 Feb;23:141-7.
- 14 He Z, Huang Z, Zhou W, Tang Z, Ma R, Liang J. Anti-biofilm Activities from Resveratrol against *Fusobacterium nucleatum*. *Front Microbiol.* 2016 Jul 5;7:1065.
- 15 Hierse L. Parodontitis als Volkskrankheit - Prävalenz, Diagnostik, Therapie und eine kritische Auseinandersetzung mit der Kostenübernahme durch die GKV. *IGZ Die Alternative* 2015 Jan;20(1):4-10.

- 16 Hosaka Y, Saito A, Maeda R, Fukaya C, Morikawa S, Makino A, Ishihara K, Nakagawa T. Antibacterial activity of povidone-iodine against an artificial biofilm of *Porphyromonas gingivalis* and *Fusobacterium nucleatum*. *Arch Oral Biol.* 2012 Apr;57(4):364-8.
- 17 Jang YJ, Choi YJ, Lee SH, Jun HK, Choi BK. Autoinducer 2 of *Fusobacterium nucleatum* as a target molecule to inhibit biofilm formation of periodontopathogens. *Arch Oral Biol.* 2013 Jan;58(1):17-27.
- 18 Jordan, AR, und Micheelis W, eds. Fünfte Deutsche Mundgesundheitsstudie-(DMS IV). Deutscher Zahnärzte Verlag DÄV, 2016.
- 19 Kolenbrander PE, Andersen RN. Inhibition of coaggregation between *Fusobacterium nucleatum* and *Porphyromonas (Bacteroides) gingivalis* by lactose and related sugars. *Infect Immun.* 1989 Oct;57(10):3204-9.
- 20 Kornman KS. Mapping the pathogenesis of periodontitis: a new look. *J Periodontol.* 2008 Aug;79(8 Suppl):1560-8.
- 21 Liu PF, Huang IF, Shu CW, Huang CM. Halitosis vaccines targeting FomA, a biofilm bridging protein of fusobacteria nucleatum. *Curr Mol Med.* 2013 Sep;13(8):1358-67.
- 22 Liu PF, Shi W, Zhu W, Smith JW, Hsieh SL, Gallo RL, Huang CM. Vaccination targeting surface FomA of *Fusobacterium nucleatum* against bacterial co-aggregation: Implication for treatment of periodontal infection and halitosis. *Vaccine.* 2010 Apr 26;28(19):3496-505.
- 23 Maddi A, Scannapieco FA. Oral biofilms, oral and periodontal infections, and systemic disease. *Am J Dent.* 2013 Oct;26(5):249-54.
- 24 Mendes L, Azevedo NF, Felino A, Pinto MG. Relationship between invasion of the periodontium by periodontal pathogens and periodontal disease: a systematic review. *Virulence.* 2015;6(3):208-15.
- 25 Micheelis W, Schiffner U. (Hrsg.) (2006): Vierte Deutsche Mundgesundheitsstudie (DMS IV). Neue Ergebnisse zu oralen Erkrankungsprävalenzen, Risikogruppen und zum zahnärztlichen Versorgungsgrad in Deutschland 2005. Köln: Deutscher Zahnärzteverlag.
- 26 Miquel S, Lagraveille R, Souweine B, Forestier C. Anti-biofilm Activity as a Health Issue. *Front Microbiol.* 2016 Apr 26;7:592.
- 27 Orlandi M, Suvan J, Petrie A, Donos N, Masi S, Hingorani A, Deanfield J, D'Aiuto F. Association between periodontal disease and its treatment, flow-mediated dilatation and carotid intima-media thickness: a systematic review and meta-analysis. *Atherosclerosis.* 2014 Sep;236(1):39-46.
- 28 Pihlstrom BL, Michalowicz BS, Johnson NW. Periodontal diseases. *Lancet.* 2005 Nov 19;366(9499):1809-20.
- 29 Rogers AH. Studies on fusobacteria associated with periodontal diseases. *Aust Dent J.* 1998 Apr;43(2):105-9.
- 30 Ryu EJ, Sim J, Sim J, Lee J, Choi BK. D-Galactose as an autoinducer 2 inhibitor to control the biofilm formation of periodontopathogens. *J Microbiol.* 2016 Sep;54(9):632-7.

- 31 Sheng J, Nguyen PT, Baldeck JD, Olsson J, Marquis RE. Antimicrobial actions of benzimidazoles against the oral anaerobes *Fusobacterium nucleatum* and *Prevotella intermedia*. *Arch Oral Biol.* 2006 Nov;51(11):1015-23.
- 32 Sigusch BW, Engelbrecht M, Völpel A, Holletschke A, Pfister W, Schütze J. Full-mouth antimicrobial photodynamic therapy in *Fusobacterium nucleatum*-infected periodontitis patients. *J Periodontol.* 2010 Jul;81(7):975-81.
- 33 Socransky SS, Haffajee AD, Cugini MA, Smith C, Kent RL Jr. Microbial complexes in subgingival plaque. *J Clin Periodontol.* 1998 Feb;25(2):134-44.
- 34 Stoykova M, Musurlieva N, Boyadzhiev D. Risk factors for development of chronic periodontitis in Bulgarian patients (pilot research). *Biotechnol Equip.* 2014 Nov 2;28(6):1150-1154.
- 35 Tatakis DN, Kumar PS. Etiology and pathogenesis of periodontal diseases. *Dent Clin North Am.* 2005 Jul;49(3):491-516.
- 36 Yucel-Lindberg T, Båge T. Inflammatory mediators in the pathogenesis of periodontitis. *Expert Rev Mol Med.* 2013 Aug 5;15:e7.
- 37 Zeidán-Chuliá F, Keskin M, Könönen E, Uitto VJ, Söderling E, Moreira JC, Gürsoy UK. Antibacterial and antigelatinolytic effects of *Satureja hortensis* L. essential oil on epithelial cells exposed to *Fusobacterium nucleatum*. *J Med Food.* 2015 Apr;18(4):503-6.