

# Supplemental Materials

## Dental Implant Material Related Changes in Molecular Signatures in Peri-implantitis – A Systematic Review and Integrative Analysis of Omics Studies

Lena Freitag

### Explanation of Provided Supplemental Materials

#### Excel files

**Table S1:** Ranked list of all common differentially expressed genes (DEGs) across *in vitro* studies/experiments<sup>1</sup> included in the systematic review (PECO 1a). This is arranged according to the number of studies and experiments in which they were expressed in the same direction, position achieved by the RRA method (= Score) and mean fold change (= FC).

**Table S2:** Ranked list of all common differentially expressed proteins across *in vitro* studies/experiments<sup>1</sup> included in the systematic review (PECO 1a). This is arranged according to the number of studies and experiments<sup>1</sup> in which they were reported (regardless of the direction of expression) and mean fold change (= FC).

**Table S3:** List of selective reported DEGs of four human studies investigating peri-implantitis compared to periodontitis included in the systematic review (PICO 3c).

**Table S4:** List of overlapping DEGs between a large-scale transcriptome study and one with a considerably smaller sample size included in the systematic review, both investigating the differences in gene expression of peri-implantitis and periodontitis. The suffix ‘.ls’ or ‘.sr’ (‘large-scale’ or ‘systematic review’) indicates the study from which the fold change and p-values were obtained. The ‘direction’ column specifies whether the overlapping DEGs were expressed in the same direction (i.e., up- or down-regulated) in the two studies. This was the case for 193 DEGs. The cut-off criteria were fold change of at least 1.5 and adjusted p-value < 0.05.

**Table S5:** List of overlapping DEGs between a large-scale transcriptome study comparing peri-implantitis and periodontitis and *in vitro* studies included in the systematic review investigating the impact of titanium particles on cellular gene expression. The suffix ‘.IvsP’ or ‘.Ti’ (‘peri-implantitis vs. periodontitis’ or ‘Titanium exposure studies’) indicates the study from which the fold change/p-values were obtained. The ‘count’ and ‘study’ column specifies the number and name, respectively, of titanium exposure studies that report the same gene with the same direction of expression as in the study comparing peri-implantitis with periodontitis. The cut-off criteria were fold change of at least 1.5 and adjusted p-value < 0.05.

#### R scripts

All self-conducted R scripts that were used for creating the search strategy (‘litsearchr’), study selection (‘revtools’) and data analysis are added in the Supplemental Materials.

---

<sup>1</sup>Various tests within a study