76 Effect of *S. epidermidis* biofilm matrix in RNA quality gene expression determination

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Obtain high quality and intact RNA is an important issue to perform gene expression analysis. It is well documented that components from biological samples can have an effect on qPCR. Others inhibitors such ethanol, isopropanol, phenol, salts are also known as important substances which can induce RNA degradation

and consequently interfere with qPCR performance. *Staphylococcus epidermidis* biofilms are among the major causative agents of nosocomial infections related to indwelling medical devices. Physicochemical properties of *S. epidermidis* biofilm matrix, rich in polysaccharides and proteins may contribute, as a sample source, to induce RNA degradation and inhibit PCR. The main purpose of this work is to assess which consequences have different inhibitors from the sample itself or sample preparation, such biofilm matrix, phenol, washing buffer solution, on RNA quality indicatior and gene expression from *S. epidermidis* biofilms. RNA contaminated samples were assessed for concentration, quality and gene expression of *icaA*, *PSM* and *Pgi* genes. Biofilm matrix presence affected the 260/230 ratio and decreased the concentration. Contamination by phenol presented the most altered parameters leading to an overestimated RNA concentration and decreased 260/230 and 260/280 ratios. Nevertheless, none of the contaminants resulted in degradation of RNA integrity. The expression of these 3 genes was also influenced by biofilm matrix presence, phenol and wash buffer solution, revealing a higher expression regarding the RNA without any treatment. Despite no loss of RNA integrity, matrix from biofilm changed gene expression profile. Furthermore, this work demonstrated the consequences of a possible poor RNA extraction procedure on gene expression studies.
Keywords: *S. epidermidis*, RNA, gene expression, biofilm matrix.