P440. Can commercial horse or sheep blood replace fresh human blood in an *ex vivo* model to study *S. epidermidis* virulence?

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Staphylococcus epidermidis, a commensal bacterium of healthy human skin and mucosae, can cause serious bloodstream infections such as bacteremia and sepsis. These infections are very hard to cure with current antimicrobial strategies and, thus, it is urgent to find new treatment options. To do so, the study of *S. epidermidis* virulence factors is of utmost importance. Therefore, the *ex vivo* human blood model has gained special interest because it enables the study of *S. epidermidis* behavior in the context of a bloodstream infection. However, this model presents limitations, mainly related to the availability of donors, complicating its implementation in the academic context. To overcome this limitation, the possibility of replacing fresh human blood by commercial blood from other mammals was evaluated.

The survival of several *S. epidermidis* strains, the secretion of proteases and the level of transcription of the genes *sepA* and *hld* were determined after 4 hours of interaction with fresh human blood and commercial horse and sheep blood. The results obtained showed, in two the inocula tested (10e8 and 10e5 CFU/mL), that although in human blood the number of bacteria tended to decrease (4 to 6-fold) during period of incubation, in both horse and sheep blood a significant increase in the number of bacteria was observed (2 to 4-fold). Furthermore, the results obtained suggested that the replacement of human blood by horse or sheep blood did not cause significant alterations in the secretion of proteases. Finally, the transcription level of the gene *sepA* was similar in the 3 types of blood, but the transcription of the gene *hld* was significantly different among conditions, being 5 to 50-fold more expressed in human blood than in horse and sheep blood, respectively.

Overall, the results obtained show that depending on the parameters under analysis, fresh human blood may or not be replaced by commercial horse or sheep blood implicating, thus, previous evaluation of its substitution.

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