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Dormant bacteria within biofilms contribute to biofilm heterogeneity. Consequently, physiological heterogeneity of biofilms may influence host immune response and tolerance to antibiotics. Recently, we described an *in vitro* model to modulate dormancy in *S. epidermidis* biofilms. Here, we present a study based on immunoproteomics, where we compared the reactive profile of *S. epidermidis* biofilm proteins with prevented and induced dormancy, to human sera. A total of 19 immunoreactive proteins were identified by MALDI-TOF/TOF. Most of these proteins present molecular functions, such as catalytic activity and ion binding. CodY and GpmA proteins were more reactive to sera when biofilm dormancy was induced, while FtnA and ClpP were more reactive when dormancy was prevented. This is the first work identifying protein immunoreactivity differences between bacterial biofilms with induced or prevented dormancy. Considering the importance of dormancy within biofilms, further studies on these proteins may provide insights into the mechanisms related to dormancy and help improving current understanding on how dormancy affects the host immune response.