ORAL ABSTRACTS

74. In vivo Selection of S. aureus agr Mutants in Human Keratinocytes

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Background. USA300 S. aureus (SA) is the major cause of skin and soft tissue infections in the USA, many of which are difficult to eradicate despite appropriate antibiotic treatment. We postulated that human keratinocytes could provide a reservoir for staphylococcal persistence.

Methods. We infected human skin grafts maintained on SCID mice, as well as keratinocytes in organotypic culture and cell lines with wt USA300 MRSA, agr null mutants and clinical isolates. Using a gentamicin protection assay, we recovered intracellular SA at times intervals, and performed histological studies.

Results. We found that accessory gene regulator (agr) null mutants were recovered from within keratinocytes in significantly higher numbers than WT USA300 strains (p

Conclusion. The dynamic selection of SA mutants that can persist within human keratinocytes provides a source for persistent and/or recurrent skin infection. (funding Ð NIH R21 AI105978, RO1 AI103854)

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