37°C for 18 hours on an orbital shaker at 200 rpm. After formation of biofilm, the 96-pin lid was placed into a micro-titre tray containing dilutions of tetra-sodium EDTA (0, 5, 10, 15 and 20 mg/ml) and incubated at 37°C for 24 hours. At time intervals of 1, 3, 6 and 24 hours, triplicate pins were removed, for each concentration of tetra-sodium EDTA, washed by inversion in 3ml in phosphate buffered saline (PBS) and then sonicated in a sonicating water bath, for 15 minutes in 3ml PBS. Triplicate log dilutions of the biofilm suspension were then plated onto cyansteine lactose electrolyte deficient (CLED) agar plates by automated spiral-plater, and incubated for 24 hours at 37°C, before performing automated colony counts. The MBECA was designated as the, lowest concentration at which growth was reduced by at least 99% when compared to the control. Results: Initial biofilm viable cell count levels averaged log 6 cfu/peg/ml. Of twelve Gram-positive bacteria tested, nine, including Staphylococcus aureus (3), methicillin resistant Staphylococcus aureus (3), Coagulase negative staphylococcus (CNS)(2), and Enterococcus sp. (1), had an MBECA of <5 mg/ml. The remaining three Gram-positive bacteria were CNS with MBECA of 20-40 mg/ml. In comparison, of the twelve Gram-negative bacteria tested, seven, including Klebsiella sp. (3), Enterobacter cloaceae (1), Proteus sp. (2), E. coli (1), had an MBECA of <5 mg/mL. The remaining five including Enterobacter cloaceae (2), Stenotrophomonas maltophilia (1), Pseudomonas aeruginosa (1) and Acinetobacter baumanii (1), had MBECA values of 10-20mg/mL. Conclusion: The MBECA of all the organisms tested, when using the LMCD, were <40 mg/ml tetra-sodium EDTA.

318(C)
DIFFERENCES IN ADHESION AND BIOFILM FORMATION OF SEVERAL CLINICAL STRAINS OF STAPHYLOCOCCUS EPIDERMIDIS

N. Cerca1, G. B. Pier2, R. Oliveira1, J. Azeredo1; 1Universidade do Minho, Braga, PORTUGAL; 2Harvard Medical School, Boston, NY.

Staphylococcus epidermidis and similar coagulase-negative staphylococci (CoNS) are now well established as major nosocomial pathogens associated with infections of indwelling medical devices. The major virulence factor of these organisms is mainly due to their ability to adhere to devices and form a biofilm. However, it is not known if adherence and biofilm formation are closely linked phenotypes for clinical isolates. Since different clinical isolates of S. epidermidis would be expected to exhibit different phenotypic behaviours it is further expected that strains of S. epidermidis might have different abilities to adhere to synthetic surfaces and subsequently produce biofilms. In this study the initial adherence and subsequent biofilm formation properties of 9 clinical isolates of S. epidermidis along with biofilm and biofilm control strains were assayed. The adherence results were interpreted in terms of the physico-chemical interaction established between the cells and the adhesion substratum as assessed by contact angle measurements. As expected, the clinical isolates exhibited different abilities to adhere to hydrophilic glass and to form biofilms, moreover, the strains that produced the highest amounts of biofilms were not the ones able to adhere to the largest extent and vice-versa. For example, the biofilm control strain actually showed the highest level of initial adhesion capability and did not produce biofilm. These results indicate that high levels of initial adherence do not necessarily lead to strong biofilm formation and that some strains do not have a high initial adherence but can subsequently form a strong biofilm. These two aspects of the pathogenesis of medical device related-infection may need to be evaluated independently to ascertain the contribution of each to the virulence of cons causing device related infections.