

# ENHANCED BIOFILM-PRODUCTION IN PATHOGENS ISOLATED FROM PATIENTS WITH RARE METABOLIC DISORDERS

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## SUMMARY

Biofilm-producing bacteria were isolated from the urine of 19 patients with very rare metabolic disorders including: hyperlactacidaemia (8 cases), sugar intolerance and gammopathy (1 case), cystinuria (2 cases), Parkinson's disease (1 case), lipidaemia (2 cases), hyperaminoaciduria (1 case) and others (4 cases). A total of 34 strains were collected, Gram-negative and gram-positive microorganisms were equally distributed among the slime-producing bacteria, with a prevalence of *Staphylococcus epidermidis* (30%) the most frequent microorganism isolated together with *Escherichia coli* and *Proteus mirabilis* that accounted for 15% of this group of strains. A quantitative assay of the biofilm production revealed that in Gram-positive pathogens it was three times greater than that observed in bacteria collected from patients not affected by metabolic diseases ( $p=0.0001$ ). In Gram-negative strains the biofilm synthesis was 2.2 times higher than those detected in the same bacteria isolated in the absence of metabolic disorders ( $p=0.0033$ ). The results observed indicate that biofilm production is enhanced in bacteria isolated from the urine of patients with metabolic disorders. It is suggested that unusual metabolites might facilitate pathogen production of biofilm found in the urine of these patients.

**KEY WORDS:** biofilm, pathogen, metabolic disorders.

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