

# ABSTRACT

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Title: Current methods in diagnostics, treatment and prevention of infection caused by methicilin resistant *Staphylococcus aureus* (MRSA)

Bachelor thesis

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Department of Biological and Medical Sciences

Study field: Medical Bioanalytics

*Staphylococcus aureus* is a bacterium that is found in the nasal mucosa of healthy people (20-40%) and skin without causing disease. Under certain circumstances, such as damage or injury of skin, mucous membranes and in immuno-incompetent individuals, the MRSA infection can originate. Therefore, hospitalized patients are much more susceptible to this infection.

The biggest dangers represent MRSA (methicillin-resistant *Staphylococcus aureus*) strains. These strains of *Staphylococcus aureus* are mostly multi-resistant, where in addition to resistance to oxacillin (methicillin), resistance to other antibiotics occurs as well. Treatment of these patients is problematic, because MRSA strains are extensively resistant and persist in the organism and in the environment. Their eradication is not simple. The patient's blood reinfection often occurs due to low levels of antibiotics.

It means a considerable financial costs for medical institutions, particularly hospitals. Therefore, preemptive actions are taken in hospitals to prevent the spread

of MRSA to other patients. Patients with MRSA are preferably isolated in single rooms with strict hygiene regime.