

**ACADEMY OF SCIENCES
OF THE REPUBLIC OF UZBEKISTAN**

**S.Yu. Yunusov Institute of the
Chemistry of Plant Substances**



Journal of Chemistry of Natural Compounds

Society of Chemists of Uzbekistan

**"ACTUAL PROBLEMS OF THE CHEMISTRY OF
NATURAL COMPOUNDS»**

SCIENTIFIC CONFERENCE OF YOUNG SCIENTISTS

Dedicated to the memory
of Academician Sabir Yunusovich Yunusov

March 17, 2022

TASHKENT

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2. Biotechnology and organic chemistry.

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Acad. S.Yu. Yunusov Institute of the Chemistry of Plant Substances,
77, Mirzo-Ulugbek Str., Tashkent, 100170, Uzbekistan

Design of primers for identification of infectious pathogenic strains of *Staphylococcus aureus*

Abdurakhimov S.A., Baymirzaev A.B., Nasriddinov Kh.Z., Lysova E.M.,
Alimukhamedova O.B., Makhnyov A.A., Ikramov S.A.

Acad. S. Yu. Yunusov Institute of the Chemistry of Plant Substances, Academy of Sciences of
the Republic of Uzbekistan, 100170, Tashkent, Mirzo Ulugbek str. 77

Staphylococcus aureus (*S. aureus*) is one of the most common inflammatory diseases. There are many applications of PCR. It is a technique now essential in cellular and molecular biology. PCR is widely used for diagnostic purposes to detect the presence of a specific DNA sequence. The PCR method sensitivity enables the direct detection of low concentrations of bacteria in clinical materials. In the result of the investigation of international articles, particularly the article of B. Liu 2020 (doi.org 10.1080/22221751.2020.1752116), it was found that the RSP gene was successfully used as a target DNA for detecting *S. aureus* strains by PCR.

During the study, some groups of primers were selected (*Table No. 1*). The properties of these primers were studied by *in silico* and *in vitro* methods.

Table No. 1: Primer sequences for PCR analysis of the RSP gene, selected by the in silico method.

№	Primer names	Primer sequence 5' - 3'	Melting temperature
1	<i>Forpcnt</i>	CGATGCATTGCAACATCTC	60 °C
	<i>Reyrcnt</i>	CACGCTGACTTCGATCTT	59°C

Conclusion. After quantitative PCR analysis of bacterial strains available in our laboratory, amplified amplicon detection was performed by gel electrophoresis in agarose gel (3% agarose gel in the BBE buffer). As a result of electrophoresis in agarose gel, the target amplicons of the RSP gene with a length of 396 bp. have been discovered. Designed primers by the *in silico* method gave positive results for the identification of infectious pathogenic strains of *S. aureus* by *in vitro* methods.

Based on the obtained results, a conclusion was made about the success of quantitative PCR analysis for the detection of the RSP gene in infectious pathogenic strains of *S. aureus* using the developed primers.