

Isolation and Identification of Microorganisms from Makeup Eye-Shadow From university students in Baghdad

Aleaa A. Jameel ¹, Amenah R. Abdullah ^{2*}, Hayder H. Ismail ³

¹ Al-kurkh health directorate, training center, Baghdad, Iraq.

² Baghdad university, college of science, Baghdad, Iraq.

³ Biotechnology Research Center, Al-Nahrain University, Iraq

*Correspondence email: amenah.r@sc.uobaghdad.edu.iq

ABSTRACT

Background: Cosmetic products and their applicators can serve as reservoirs for microorganisms that may pose potential health risks, particularly when makeup brushes are shared among users. Repeated use without proper cleaning may facilitate the transmission of pathogenic microorganisms and increase the risk of skin and ocular infections. This study aimed to isolate and identify microbial contaminants associated with eye-shadow makeup brushes used by university students in Baghdad and to determine the antimicrobial susceptibility patterns of the recovered bacterial isolates. **Methodology:** Fifty eye-shadow makeup brush samples were collected from university students, makeup artists who shared cosmetic brushes and individuals who used personal makeup brushes. Samples were cultured on nutrient agar, blood agar, and Sabouraud dextrose agar for the isolation of bacteria and fungi. Bacterial identification was confirmed using 16S rRNA gene polymerase chain reaction (PCR) followed by sequence analysis. Antimicrobial susceptibility testing was performed using the disk diffusion method against a panel of commonly used antibiotics. **Results:** Two principal microorganisms were isolated from the examined samples: *Staphylococcus lentus* (64%) and *Candida albicans* (36%). The bacterial isolates exhibited resistance to erythromycin, ampiclox, rifampicin, amoxicillin, streptomycin, norfloxacin, and chloramphenicol, while remaining susceptible to ciprofloxacin, levofloxacin, and gentamicin. **Conclusions:** Eye-shadow makeup brushes frequently harbor potentially pathogenic microorganisms capable of contributing to skin and ocular infections. Sharing cosmetic brushes may facilitate microbial transmission and represents a potential public health concern. Regular cleaning of cosmetic applicators and avoidance of sharing personal makeup tools are recommended to reduce the risk of contamination and infection.

Received: 11/5/2025

Accepted: 15/9/2025

Online: 17/8/2026

2026. This is an open-access article under the CC by license <http://creativecommons.org/licenses/by/4.0>



Keywords: Eye-shadow brushes; cosmetic contamination; *Staphylococcus lentus*; *Candida albicans*; antimicrobial susceptibility.

<https://doi.org/10.24126/jobrc.2026.20.2.931>

INTRODUCTION

Cosmetic products have become an integral part of modern daily life and are widely used for personal hygiene, skin care, sun protection, and aesthetic enhancement (1). Owing to their composition, many cosmetic products contain water, lipids, proteins, minerals, and other nutrients that can provide favorable conditions for microbial survival and proliferation, particularly when preservative systems are inadequate or products are improperly handled (2). Consequently, microbial contamination of cosmetics has become an important public health concern because contaminated products may serve as reservoirs for opportunistic and pathogenic microorganisms.

Among cosmetic accessories, makeup brushes are particularly susceptible to microbial contamination because they are repeatedly exposed to the skin, periocular region, and surrounding environment. Frequent use, inadequate cleaning, prolonged storage, and sharing of cosmetic brushes among different users substantially increase the risk of microbial transmission (3–7). Contaminated makeup applicators have been implicated in the spread of skin and ocular infections and may represent an important source of cross-contamination in both personal and professional cosmetic settings (4,5).

Several studies have reported the presence of clinically important microorganisms in cosmetic products and their applicators, including *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Klebsiella* spp., *Bacillus* spp., and various fungal species (8–11). These microorganisms have been associated with a broad spectrum of dermatological and ophthalmic disorders, including folliculitis, impetigo, conjunctivitis, allergic contact dermatitis, and other opportunistic infections (3,8,10,12–15). In particular, *Pseudomonas aeruginosa* has been recognized as an important ocular pathogen capable of causing severe conjunctivitis and, in untreated cases, permanent visual impairment (15).

The microbiological quality of cosmetic products is influenced by numerous factors, including product formulation, water content, manufacturing conditions, storage practices, preservative efficacy, expiration date, and consumer hygiene (16–19). Cosmetics with high water activity are especially vulnerable to microbial contamination because they provide an ideal environment for microbial growth. Furthermore, repeated handling of cosmetic products, prolonged use of makeup brushes, and inadequate cleaning practices significantly increase the likelihood of microbial colonization and contamination (18,19).

Although regulatory authorities have established microbiological quality standards for cosmetic products, contamination continues to be reported worldwide (16). Public awareness of the health risks associated with contaminated cosmetics remains limited, particularly among young adults who frequently use and share cosmetic products. University students constitute an important population in this regard because cosmetic sharing and prolonged reuse of makeup brushes are relatively common practices that may facilitate microbial transmission and increase the risk of infection (15–20).

Therefore, the present study aimed to isolate and identify microorganisms contaminating eye-shadow makeup brushes used by university students in Baghdad. In addition, the antimicrobial susceptibility profiles of the recovered bacterial isolates were determined to evaluate their potential public health significance and to provide evidence supporting improved hygiene practices during cosmetic use.

METHODOLOGY

Study Population

The study population comprised female university students residing in university dormitories as well as those living off-campus in private residences. The study also included students who carried personal makeup kits to university and professional makeup artists who routinely used or shared eye-shadow makeup brushes.

Sample Size

A total of 50 eye-shadow makeup brush samples were collected from university students residing in dormitories, students living within the university environment, professional makeup artists who shared cosmetic brushes and individuals who exclusively used their own makeup brushes.

Specimen Collection and Preparation

Samples were collected using sterile cotton swabs moistened with sterile normal saline after obtaining informed consent from the participants. The swabs were immediately transferred into sterile transport medium and transported to the laboratory under cold-chain conditions. Upon arrival, the specimens were allowed to equilibrate to room temperature before microbiological analysis.

Preparation of Culture Media

Three microbiological culture media were used for the isolation of bacterial and fungal contaminants: Nutrient Agar (NA), Blood Agar (BA), and Sabouraud Dextrose Agar (SDA). All media were prepared according to the manufacturers' instructions. The prepared media were sterilized by autoclaving at 121°C for 15 min, aseptically poured into sterile Petri dishes, allowed to solidify, and stored until use.

Nutrient Agar

Twenty-eight grams of nutrient agar powder were suspended in one litre of distilled water and heated until completely dissolved. The medium was sterilized by autoclaving at 121°C for 15 min, poured into sterile Petri dishes, allowed to solidify, and stored under refrigeration until use.

Blood Agar

Twenty-eight grams of blood agar base were dissolved in one litre of distilled water and sterilized by autoclaving at 121°C for 15 min. After cooling to 45–50°C, sterile defibrinated sheep blood (5%, v/v) was aseptically added and mixed thoroughly before the medium was dispensed into sterile Petri dishes and allowed to solidify.

Sabouraud Dextrose Agar

Sixty-five grams of Sabouraud Dextrose Agar powder were suspended in one litre of distilled water and heated with continuous agitation until completely dissolved. Following sterilization by autoclaving at 121°C for 15 min, the medium was cooled to approximately 45°C, poured into sterile Petri dishes, and allowed to solidify before inoculation.

Isolation of Microorganisms

The inoculated Nutrient Agar and Blood Agar plates were incubated aerobically at 37°C for 24 h for bacterial isolation. Sabouraud Dextrose Agar plates were incubated at 37°C and examined daily for seven days to detect fungal growth. Colony morphology was recorded, and representative colonies were selected for subsequent identification.

Molecular Identification of Bacterial Isolates

The predominant bacterial isolate was identified by amplification and sequencing of the 16S ribosomal RNA (16S rRNA) gene. Genomic DNA was extracted from purified bacterial colonies, and PCR amplification was performed using the universal bacterial primer pair 27F (5'-AGAGTTTGATCCTGGCTCAG-3') and 1492R (5'-TACGGTTACCTTGTTACGACTT-3') (21). PCR reactions were prepared using standard molecular biology reagents, including TAE buffer, loading dye, DNA ladder, and ethidium bromide.

PCR amplification was carried out using a touchdown protocol consisting of an initial denaturation at 95°C for 1 min, followed by 30 cycles of denaturation at 95°C for 30 s, annealing at 60°C for 1 min, and extension at 72°C for 1 min. A final extension was performed at 72°C for 7 min, followed by a final hold at 10°C (21). PCR products were submitted to Macrogen Inc. (South Korea) for Sanger sequencing using an ABI 3730XL DNA Analyzer, and the obtained nucleotide sequences were analysed using Geneious software.

Antimicrobial Susceptibility Testing

The antimicrobial susceptibility of the bacterial isolates was determined using the Kirby–Bauer disk diffusion method. The antibiotics evaluated included ciprofloxacin (10 µg), gentamicin (10 µg), norfloxacin (10 µg), amoxicillin (10 µg), streptomycin (10 µg), rifampicin (10 µg), erythromycin (10 µg), chloramphenicol (10 µg), ampiclox (10 µg), and levofloxacin (10 µg). Following aerobic incubation at 37°C for 24 h, inhibition zone diameters were measured and interpreted according to the National Committee for Clinical Laboratory Standards (NCCLS) guidelines (20).

RESULTS

Demographic Characteristics of the Participants

A total of 50 female university students participated in the study. Most participants were between 26 and 30 years of age (42%), followed by 20–25 years (38%) and 31–35 years (20%). All participants were students (100%). Regarding cosmetic use, 60% reported applying makeup daily, whereas 14% applied makeup twice weekly, 12% once weekly, and 14% only occasionally. The duration of makeup application was 4–6 h for 46% of participants, 2–4 h for 32%, and more than 6 h for 22%.

With respect to makeup brush use, 70% of participants had been using their current brushes for more than six months, while 26% had used them for 4–6 months and only 4% for 1–3 months. Cleaning practices were generally poor, with 92% of participants reporting that they had never washed their makeup brushes, 6% cleaning them once monthly, and only 2% cleaning them once weekly. Among those who cleaned their brushes, 72% used warm water and 28% used detergents or soap.

Twenty-four percent of participants reported a previous history of skin irritation, whereas 76% had never experienced skin irritation. Notably, 64% believed that their skin irritation was associated with the use of makeup brushes, while 34% had previously consulted a dermatologist (Table 1)

TABLE (1): DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

Characteristics of the Population	Number of Participants	Percentage of the Population
Age Range		
20-25	19	38
26-30	21	42
31-35	10	20
Occupation		
Student	50	100
Frequency of applying makeup		
Everyday	30	60
Twice per week	7	14
Once per week	6	12
Occasionally	7	14
Duration of makeup when applied		
2-4 hours	16	32
4-6 hours	23	46
>6 hours	11	22
Duration of use of current brush		
1-3 months	2	4
4-6 months	13	26
Over 6 months	35	70

Frequency of washing makeup brushes		
Everyday	-	-
Twice a week	-	-
Once a week	1	2
Once a month	3	6
Never	46	92
Equipment used for washing brushes		
Normal water	-	-
Warm water	36	72
Detergents/soaps	14	28
Had skin irritation before		
Yes	12	24
No	38	76
Suspected skin irritation was from makeup brush		
Yes	32	64
No	12	24
Visited a dermatologist before		
Yes	17	34
No	33	66

Identification *Staphylococcus lentus* isolate

Molecular Identification of the Predominant Bacterial Isolate

The predominant bacterial isolate recovered from contaminated eye-shadow makeup brushes was identified by amplification and sequencing of the 16S rRNA gene. PCR amplification using the universal bacterial primers 27F and 1492R produced the expected amplicon of approximately 1,500 bp (Figure 1). Sequence analysis demonstrated 100% query coverage and 100% sequence identity with *Staphylococcus lentus* strain HM17 (GenBank accession number MN401134.1), confirming the identity of the isolate (Table 2).

Table (2): *Staphylococcus* species data analysis utilizing the general gene 16s ribosomal RNA gene from NCBI.

Description	Max Score	Total Score	Query cover	E value	Ident	Accession
<i>Staphylococcus lentus</i> strain HM17 16S ribosomal RNA gene, partial sequence	2606	2606	100%	0	100%	MN401134.1

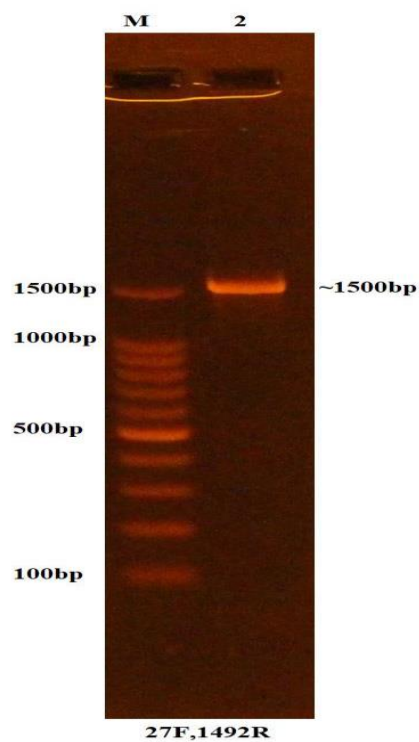


Figure (1): Results of the amplification of 16s RNA gene of *Staphylococcus lentus* were fractionated on 1.5% agarose gel electrophoresis stained with Eth.Br. M: 100bp ladder marker. Lanes 2 seem like PCR products with a length of 1500 bp. observed using ethidium promide (1% agarose con. and 5V/cm) for UV staining.

Table (3): Microorganisms isolated from the makeup brushes (eye-shadow)

Organism	Number Isolated	Frequency (%)
<i>Staphylococcus lentus</i>	32	64
<i>Candida albicans</i>	18	36

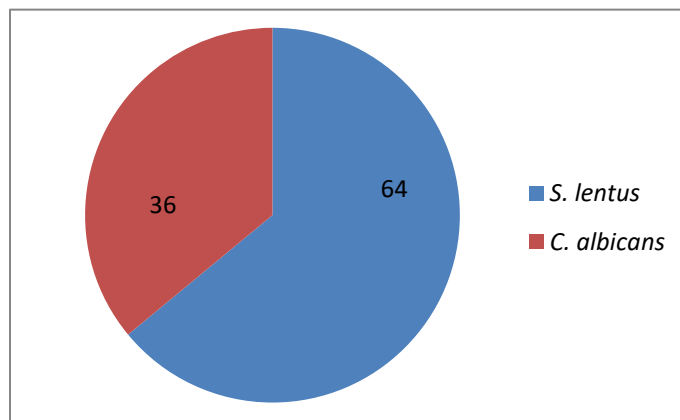


Figure (2): Percentage of each microbial growth

Microorganisms Isolated from Eye-Shadow Makeup Brushes

Microbiological examination showed that all sampled eye-shadow makeup brushes were contaminated with microorganisms. Two principal microbial species were identified: *Staphylococcus lentus*, isolated from 32 samples (64%), and *Candida albicans*, isolated from 18 samples (36%) (Table 3, Figure 2). *Staphylococcus lentus* represented the predominant bacterial contaminant recovered from the examined makeup brushes.

Antimicrobial Susceptibility of *Staphylococcus lentus*

The antimicrobial susceptibility profile of *Staphylococcus lentus* is presented in Table (4) and Figure (3). The isolates demonstrated resistance to erythromycin, ampiclox, rifampicin, amoxicillin, streptomycin, norfloxacin, and chloramphenicol. In contrast, all isolates were susceptible to ciprofloxacin, levofloxacin, and gentamicin, indicating that these antimicrobial agents remain effective against the recovered isolates.

Table (4): Antibiotics susceptibility pattern

Isolate	Antibiotics									
	CPX	E	LEV	CN	APX	RD	AML	S	NB	CH
<i>Staphylococcus lentus</i>	S	R	S	S	R	R	R	R	R	R

R= Resistant, S= Sensitive; CPX = Ciproflox; E = Erythromycin; LEV= Levofloxacin; CN= Gentamycin; APX= Ampiclox; RD= Rifampicin; AML= Amoxil; S= Streptomycin; NB= Norfloxacin; CH= Chloramphenicol

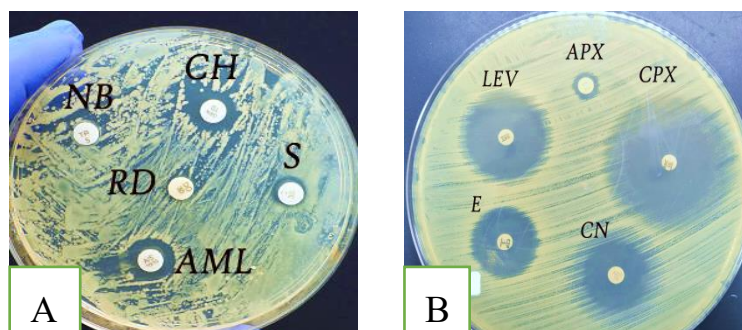


Figure (3): Antibiotic Sensitivity of *Staphylococcus lentus* against A: CH= Chloramphenicol, S= Streptomycin, AML= Amoxil, RD= Rifampicin, NB= Norfloxacin and B: LEV= Levofloxacin, APX= Ampiclox, CPX = Ciproflox, CN= Gentamycin, E = Erythromycin

DISCUSSION

The present study demonstrated that eye-shadow makeup brushes used by university students were frequently contaminated with microorganisms, with bacterial contamination occurring more frequently than fungal contamination. This finding highlights the potential role of cosmetic applicators as reservoirs of microorganisms and supports concerns regarding the hygienic use and sharing of makeup brushes. Frequent contact of cosmetic brushes with the skin, periocular region, and surrounding environment, together with inadequate cleaning practices, may facilitate microbial accumulation and increase the risk of cross-contamination (15).

Microbiological analysis revealed that *Staphylococcus lentus* was the predominant bacterial species isolated, accounting for 64% of all contaminated samples, whereas *Candida albicans* represented 36% of the recovered microorganisms. These findings are generally consistent with previous reports demonstrating that *Staphylococcus* species are among the most common bacterial contaminants recovered from cosmetic products and their applicators (22,23). Likewise, previous investigations have reported microbial contamination of shared cosmetic products and beauty salon equipment, emphasizing the importance of maintaining proper cosmetic hygiene (15,22).

The predominance of *Staphylococcus* species observed in this study is biologically plausible because these bacteria constitute part of the normal human skin microbiota and can readily contaminate cosmetic products through repeated handling and direct skin contact. Prolonged use of makeup brushes without regular cleaning, together with frequent sharing between users, may further increase bacterial colonization and persistence on cosmetic applicators (15,22,23).

Candida albicans was the only fungal species recovered in the present study. Although this yeast commonly exists as part of the normal human microbiota, it is also recognized as an opportunistic pathogen capable of causing superficial and systemic infections under favorable conditions (26). The isolation of *C. albicans* from eye-shadow makeup brushes indicates that cosmetic applicators may provide a vehicle for fungal transmission, particularly when hygiene practices are inadequate. Similar observations have been reported in previous studies investigating microbial contamination of cosmetic products (15,25).

Antimicrobial susceptibility testing demonstrated that the recovered *Staphylococcus lentus* isolates were resistant to erythromycin, ampiclox, rifampicin, amoxicillin, streptomycin, norfloxacin, and chloramphenicol, whereas susceptibility was retained to ciprofloxacin, levofloxacin, and gentamicin. These findings indicate variability in the antimicrobial susceptibility profile of cosmetic-associated bacterial isolates and emphasize the importance of continued surveillance of antimicrobial resistance among microorganisms recovered from cosmetic products (22).

The questionnaire findings further support the microbiological results. Most participants reported prolonged use of the same makeup brushes, and the majority had never cleaned them. These behavioral practices likely contributed to the high prevalence of microbial contamination observed in this study and reinforce the importance of regular cleaning and appropriate handling of cosmetic applicators to reduce microbial transmission (15,22).

Overall, the findings demonstrate that eye-shadow makeup brushes may serve as reservoirs of potentially pathogenic microorganisms. Promoting appropriate cosmetic hygiene practices, avoiding the sharing of makeup brushes, and encouraging routine cleaning of cosmetic applicators may reduce the risk of microbial contamination and the transmission of skin and ocular infections (15,22).

ACKNOWLEDGMENT

The authors gratefully acknowledge the staff of the (Department, College or University) for their technical and general support.

References

1. Onurdağ FK, Özgen S, Abbasoğlu D. Microbiological investigation of used cosmetic samples. Hacettepe Univ J Fac Pharm. 2010;30(1):1–16. Verified against the journal record.
2. Dadashi L, Dehghanzadeh R. Investigating incidence of bacterial and fungal contamination in shared cosmetic kits available in women's beauty salons. Health Promot Perspect. 2016;6(3):159–163. doi:10.15171/hpp.2016.25. PMID:27579260.
3. Enemuor SC, Ojih MI, Isah S, Oguntibeju OO. Evaluation of bacterial and fungal contamination in hairdressing and beauty salons. Afr J Microbiol Res. 2013;7(14):1222–1225. doi:10.5897/AJMR12.917.
4. Detmer A, Jørgensen C, Nylén D. A guidance document on microbiological control of cosmetic products. Environmental Project No. 1336. Copenhagen: Danish Environmental Protection Agency; 2010.

5. Siegert W. Microbiological quality management for the production of cosmetics and detergents. *SOFW J.* 2012;138:30.
6. Ibegbulam-Njoku PN, Chijioke-Osuji CC. Microbiological evaluation of cosmetic products sourced in Aba City, Nigeria. *Int J Sci Rep.* 2016;2(4):74–80. doi:10.18203/issn.2454-2156.IntJSciRep20161273.
7. Gamal MAB, Azza A, Al Gayeed AOA, Sawan MS. Microbiological quality assessment of selected brands of cosmetic creams sold in Al-Khoms City, Libya. *IOSR J Dent Med Sci.* 2015;14(2):60–65.
8. Duggal SD, Bharara T, Jena PP, Kumar A, Sharma A, Gur R, et al. Staphylococcal bullous impetigo in a neonate. *World J Clin Cases.* 2016;4(7):191–194. doi:10.12998/wjcc.v4.i7.191. PMID:27458596.
9. Bashir A, Lambert P. Microbiological study of used cosmetic products: highlighting possible impact on consumer health. *J Appl Microbiol.* 2020;128(2):598–605. doi:10.1111/jam.14479. PMID:31597215.
10. Abu Shaqra QM, Al-Groom RM. Microbiological quality of hair and skin care cosmetics manufactured in Jordan. *Int Biodeterior Biodegradation.* 2012;69:69–72. doi:10.1016/j.ibiod.2011.12.009.
11. Alswedi FG, Jaber ASH. Isolation of pathogenic bacteria from selected male barbershops in Nasiriyah City. *Int J Pharm Qual Assur.* 2019;10(2):233–241. doi:10.25258/ijpqa.10.2.4.
12. Alharbi NM, Alhashim HM. Beauty salons are key potential sources of disease spread. *Infect Drug Resist.* 2021;14:1247–1253. doi:10.2147/IDR.S303461. PMID:33790595.
13. Pinon A, Alexandre V, Cupferman S, Crozier A, Vialette M. Growth, survival and inactivation of *Pseudomonas aeruginosa* and *Staphylococcus aureus* strains of various origins in the presence of ethanol. *Int J Cosmet Sci.* 2007;29(2):111–119. doi:10.1111/j.1467-2494.2007.00365.x.
14. Behravan J, Bazzaz BSF, Malaekheh P. Survey of bacteriological contamination of cosmetic creams in Iran. *Int J Dermatol.* 2005;44(6):482–485. doi:10.1111/j.1365-4632.2005.01963.x. PMID:15941436.
15. Lundov MD, Moesby L, Zachariae C, Johansen JD. Contamination versus preservation of cosmetics: a review of legislation, usage, infections, and contact allergy. *Contact Dermatitis.* 2009;60(2):70–78. doi:10.1111/j.1600-0536.2008.01501.x. PMID:19207376.
16. Sawant SS, Kelkar-Mane V. Study of bacterial contaminants in local and branded lipsticks before and after consumer use. *Int J Recent Adv Multidiscip Res.* 2015;2(1):149–154.
17. Mohammed TK, Jasim AA, Abdullah HN, Alabbas AS, Abbas AH, Jawad MA. Isolation of selected pathogenic bacteria from students' makeup as part of biosafety in medical laboratories. *Biochem Cell Arch.* 2020;20:6199–6205.
18. Al Kindi A, Alkahtani AM, Nalubega M, El-Chami C, O'Neill C, Arkwright PD, et al. *Staphylococcus aureus* internalized by skin keratinocytes evades antibiotic killing. *Front Microbiol.* 2019;10:2242. doi:10.3389/fmicb.2019.02242. PMID:31608046.
19. Alghamdi SA, Alotaibi HA, Al-Subai MZ, Alwakeel PSS. Isolation and identification of bacterial and fungal flora from female hair samples in Riyadh, Saudi Arabia. *Int J Environ Agric Biotechnol.* 2018;3(1):1–5. doi:10.22161/ijeab/3.1.1.
20. Edward SM, Megantara I, Dwiyan R. Detection of fungi in hairbrushes used in beauty salons in Jatinangor. *Althea Med J.* 2015;2(4):512–520. doi:10.15850/amj.v2n4.636.
21. Ruddy M, Cummins M, Drabu Y. Hospital hairdresser as a potential source of cross-infection with methicillin-resistant *Staphylococcus aureus*. *J Hosp Infect.* 2001;49(3):225–227. doi:10.1053/jhin.2001.1065. PMID:11716642.
22. Pedraz J, Delgado-Jiménez Y, Pérez-Gala S, Nam-Cha S, Fernández-Herrera J, García-Díez A. Cutaneous expression of systemic candidiasis. *Clin Exp Dermatol.* 2009;34(1):106–110.
23. Dabas PS. An approach to the etiology, diagnosis and management of different types of candidiasis. *J Yeast Fungal Res.* 2013;4(6):63–74.

24. Lane DJ. 16S/23S rRNA sequencing. In: Stackebrandt E, Goodfellow M, editors. Nucleic acid techniques in bacterial systematics. Chichester: John Wiley & Sons; 1991. p. 115–175. This is the appropriate source for the standard bacterial 27F and 1492R primers.
25. Bauer AW, Kirby WMM, Sherris JC, Turck M. Antibiotic susceptibility testing by a standardized single-disk method. Am J Clin Pathol. 1966;45(4):493–496. PMID:5325707.
26. Clinical and Laboratory Standards Institute. Performance standards for antimicrobial susceptibility testing. 32nd ed. CLSI supplements M100. Wayne, PA: Clinical and Laboratory Standards Institute; 2022.
This replaces the incomplete and unsuitable “NCCLS overview” webpage citation in the original bibliography.

عزل وتشخيص الكائنات الحية الدقيقة من مكياج (ظلال العيون) من طلبة الجامعات من بغداد

علياء عبد الحسين جميل ، امانة رامي عبدالله ، حيدر حقي إسماعيل

دائرة صحة بغداد الكرخ / مركز التدريب والتنمية البشرية / العراق
جامعة بغداد/ كلية العلوم / العراق
مركز بحوث التقنيات الاحيائية / جامعة النهرين / العراق

الخلاصة

خلفية البحث : هدفت هذه الدراسة إلى عزل وتشخيص الملوثات الميكروبية الموجودة على فرش ظلال العيون المستخدمة من قبل طالبات الجامعات في بغداد، فضلاً عن تقييم أنماط الحساسية للمضادات الحيوية للبكتيريا المعزولة خطراً على الصحة العامة، ولا سيما عند مشاركة فرش المكياج بين المستخدمين. كما أن الاستخدام المتكرر لفرش المكياج دون تنظيفها بصورة منتظمة قد يسهم في انتقال الكائنات الدقيقة الممرضة وزيادة خطر الإصابة بالتهابات الجلد والعيون. **المواد وطرائق العمل :** جمعت خمسون (50) عينة من فرش ظلال العيون من طالبات الجامعات، وفناني التجميل الذين يتشاركون استخدام الفرش، إضافةً إلى مستخدمين يعتمدون على فرشهم الشخصية. زُرعت العينات على أوساط زرعية مختلفة شملت الأكار المغذي (Nutrient Agar)، وأكار الدم (Blood Agar)، وأكار سابورو ديكستروز (Sabouraud Dextrose Agar) لعزل البكتيريا والفطريات. وأكد تشخيص العزلات البكتيرية باستخدام تفاعل البوليميراز المتسلسل (PCR) المعتمد على جين **16S rRNA**، تلاه تحليل تسلسل الحمض النووي. كما أُجري اختبار الحساسية للمضادات الحيوية باستخدام طريقة الانتشار بالأقراص. **النتائج :** أظهرت النتائج عزل نوعين رئيسيين من الكائنات الحية الدقيقة، هما **Staphylococcus lentus** بنسبة (64%) و **Candida albicans** بنسبة (36%). وأظهرت عزلات **Staphylococcus lentus** مقاومة للإريثروميسين، والأمبيكولوكس، والريفاميسين، والأموكسيسيلين، والستربتوميسين، والنورفلوكساسين، والكلورامفينيكول، في حين كانت حساسة للسبيروفلوكساسين، والليفوفلوكساسين، والجنتاميسين. **الاستنتاجات :** تُظهر هذه الدراسة أن فرش ظلال العيون قد تمثل خزاناً للكائنات الحية الدقيقة الممرضة والقادرة على التسبب في التهابات الجلد والعيون. كما أن مشاركة فرش المكياج بين الأفراد قد تسهم في انتقال هذه الكائنات الدقيقة، مما يشكل خطراً محتملاً على الصحة العامة. لذا يُوصى بتنظيف فرش المكياج بصورة دورية، وتجنب مشاركتها مع الآخرين، والالتزام بالممارسات الصحية السليمة للحد من خطر التلوث والعدوى.

الكلمات المفتاحية : فرش ظلال العيون، تلوث مستحضرات التجميل، *Staphylococcus lentus*، *Candida albicans*، الحساسية للمضادات الحيوية.