**Dermal Literature Review**

**Period: 01/08/2024 – 01/09/2024**

[Scientific Highlights: 1](#_Toc163992178)

[Burn wound Infections (infections of or preventing infections) 1](#_Toc163992179)

[Diabetic Foot Ulcers 1](#_Toc163992180)

[Venous Leg Ulcers 1](#_Toc163992181)

[Dermal Biofilms 1](#_Toc163992182)

[Atopic Dermatitis & SA 2](#_Toc163992183)

[Dermal Fungal 2](#_Toc163992184)

[Competitors 2](#_Toc163992185)

[Dressings 2](#_Toc163992186)

[Staphylococcal skin infection 2](#_Toc163992187)

[Other news of possible interest 2](#_Toc163992188)

Scientific Highlights:

Burn wound Infections (infections of or preventing infections)

1. "Effective methods for the decontamination of healthcare waste: Ozone and UV-C radiation process".
2. Molecular characteristics and antimicrobial resistance profiles of Staphylococcus aureus isolates from burns.
3. Bacteriophage therapy reduces Staphylococcus aureus in a porcine and human ex vivo burn wound infection model.
4. Bioactivation of Konjac Glucomannan Films by Tannic Acid and Gluconolactone Addition.
5. Nanoarchitectonics of in Situ Antibiotic-Releasing Acicular Nanozymes for Targeting and Inducing Cuproptosis-like Death to Eliminate Drug-Resistant Bacteria.
6. Composite antibacterial hydrogels based on two natural products pullulan and ε-poly-l-lysine for burn wound healing.
7. Black Phosphorus Nanosheets-Based Hydrogel for Efficient Bacterial Inhibition and Accelerating Wound Healing.
8. Nitric Oxide as an Efficient Antimicrobial Treatment for Second-Degree Burn Wounds.
9. Bi(2)Se(3)/PAAS Hydrogels with Photothermal and Antioxidant Properties for Bacterial Infection Wound Therapy by Improving Vascular Function and Regulating Glycolipid Metabolism.
10. Multifunctional silver nanoparticle embedded eri silk cocoon scaffolds against burn wounds-associated infection.
11. Farnesol Emulsion as an Effective Broad-Spectrum Agent against ESKAPE Biofilms.
12. Coaxial electrospun nanofiber accelerates infected wound healing via engineered probiotic biofilm.

Diabetic Foot Ulcers

1. Multifunctional Janus Membrane for Diabetic Wound Healing and Intelligent Monitoring.
2. Infectious and Inflammatory Microenvironment Self-Adaptive Artificial Peroxisomes with Synergetic Co-Ru Pair Centers for Programmed Diabetic Ulcer Therapy.
3. Factors Associated With Major Lower Extremity Amputations in Diabetic Foot Infections at a County Hospital in Guatemala.
4. Assessment of Antimicrobial Activity of Chitosan, ZnO, and Urtica dioica-ZnO NPs Against Staphylococcus aureus Isolated from Diabetic Ulcers.
5. Clinical efficacy of endovascular revascularization combined with vacuum-assisted closure for the treatment of diabetic foot.
6. Microbiological characterization of neuropathic diabetic foot infection: a retrospective study at a Portuguese tertiary hospital.
7. Two-Step Conservative Surgery for Complicated Forms of Diabetes-Related Foot Osteomyelitis.
8. Understanding and treating diabetic foot ulcers: Insights into the role of cutaneous microbiota and innovative therapies.
9. Challenges in Biofilm Identification in Diabetic Foot Infections: Review of Literature.
10. PDIA iminosugar influence on subcutaneous Staphylococcus aureus and Pseudomonas aeruginosa infections in mice.
11. Treatment of bacterially contaminated lower extremity ulcers with a fatty acid-containing wound matrix: a case series.
12. Commentary on: Factors influencing foot care behaviour among patients with diabetes: An integrative literature review by Woo MWJ, CUI J (2023).
13. How Would You Treat This Inpatient With Type 2 Diabetes Mellitus? Grand Rounds Discussion From Beth Israel Deaconess Medical Center.
14. A potential therapeutic strategy of an innovative probiotic formulation toward topical treatment of diabetic ulcer: an in vivo study.
15. Baicalein-modified chitosan nanofiber membranes with antioxidant and antibacterial activities for chronic wound healing.
16. A systematic review of diabetic foot infections: pathogenesis, diagnosis, and management strategies.
17. Evolving Trends in the Management of Diabetic Foot Ulcers: A Narrative Review.
18. Exploration of predictive risk factors for diabetic foot in patients with diabetes in Beijing: analysis of 5-year follow-up data of patients with diabetes mellitus in a single center in Beijing.
19. Application of Continuous Care Pattern Based on Information-Motivation-Behavioral Skills Model in out-of-Hospital Rehabilitation of Diabetic Foot Ulceration Patients: A Randomized Controlled Trial.
20. The Impact of Hearing Impairment on Patient Care and Autonomy.
21. A Case of Recurrent Diabetic Foot Ulcers With Multi-drug Resistant Poly-Microbial Infections.
22. Antibiotic Eluting Bone Void Filler Versus Systemic Antibiotics For Pedal Osteomyelitis.
23. Bilayer hydrogel with a protective film and a regenerative hydrogel for effective diabetic wound treatment.
24. A Case Report: The Effects of Photobiomodulation Therapy and Amniotic Fluid Gel on a Severe Diabetic Foot Ulcer.
25. Magnetic Resonance Imaging and 99Tc WBC-SPECT/CT Scanning in Differential Diagnosis between Osteomyelitis and Charcot Neuroarthropathy: A Case Series.
26. Diabetic Foot and Fungal Infections: Etiology and Management from a Dermatologic Perspective.
27. Non-surgical interventions for preventing contralateral tissue loss and amputation in dysvascular patients with a primary major lower limb amputation.
28. Classification of Diabetic Foot Ulcers from Images Using Machine Learning Approach.

Venous Leg Ulcers

Dermal Biofilms

1. Staphylococcus aureus/Staphylococcus epidermidis from skin microbiota are balanced by Pomegranate peel extract: An eco-sustainable approach.
2. Dihydrothiazolo ring-fused 2-pyridone antimicrobial compounds treat Streptococcus pyogenes skin and soft tissue infection.
3. Control of pathogenic bacterial biofilm associated with acne and the anti-inflammatory potential of an essential oil blend.
4. New resorcylic acid derivatives of Lysimachia tengyuehensis against MRSA and VRE by interfering with bacterial metabolic imbalance.
5. A Natural deep eutectic solvent as an effective material for dual debridement and antibiofilm effects in chronic wound treatment.
6. Restriction of arginine induces antibiotic tolerance in Staphylococcus aureus.
7. A one-stop integrated natural antimicrobial microneedles with anti-inflammatory, pro-angiogenic and long-term moisturizing properties to accelerate diabetic wound healing.
8. Ultrasonic nanotechnology for the effective management of Staphylococcus aureus skin infections: an update.
9. M2 macrophage-polarized anti-inflammatory microneedle patch for accelerating biofilm-infected diabetic wound healing via modulating the insulin pathway.
10. Microenvironment-Responsive Antibacterial, Anti-Inflammatory, and Antioxidant Pickering Emulsion Stabilized by Curcumin-Loaded Tea Polyphenol Particles for Accelerating Infected Wound Healing.
11. Essential Oil Components Incorporated Emulsion Hydrogels for Eradicating Dermatophytosis Caused by Pathogenic Fungi Trichophyton mentagrophytes and Microsporum canis.
12. Induction of biofilm in extended-spectrum beta-lactamase Staphylococcus aureus with drugs commonly used in pharmacotherapy.
13. Pathogenomic profile and clonal diversity of potential zoonotic MRSA-CC7-ST789-t091-SCCmecV from human skin and soft tissue infections.
14. Nitrogen Vacancy Modulation of Tungsten Nitride Peroxidase-Mimetic Activity for Bacterial Infection Therapy.
15. Light-activated nanoclusters with tunable ROS for wound infection treatment.
16. In vitro antimicrobial and antibiofilm activity of phage cocktail against Mammaliicoccus sciuri, a causative agent of bovine mastitis.
17. Nanomaterial-based therapeutics for enhanced antifungal therapy.
18. Aeromonas salmonicida AI-1 and AI-2 quorum sensing pathways are differentially regulated by rainbow trout mucins and during in vivo colonization.
19. New clinical approach in facial mild-moderate acne: Re-stabilization of skin microbiota balance with a topical biotechnological phytocomplex.
20. Aggregatibacter actinomycetemcomitans Dispersin B: The Quintessential Antibiofilm Enzyme.
21. Isolation of Staphylococcus pseudintermedius in Immunocompromised Patients from a Single Center in Spain: A Zoonotic Pathogen from Companion Animals.
22. vB\_CacS-HV1 as a Novel Pahexavirus Bacteriophage with Lytic and Anti-Biofilm Potential against Cutibacterium acnes.
23. The pH-Insensitive Antimicrobial and Antibiofilm Activities of the Frog Skin Derived Peptide Esc(1-21): Promising Features for Novel Anti-Infective Drugs.
24. The skin microbiome stratifies patients with cutaneous T cell lymphoma and determines event-free survival.

Atopic Dermatitis & SA

1. Correction to: Methicillin-resistant Staphylococcus aureus and coagulase-negative Staphylococcus produce antimicrobial substances against members of the skin microbiota in children with atopic dermatitis.
2. The Clinical, Mechanistic, and Social Impacts of Air Pollution on Atopic Dermatitis.
3. Genomic and functional divergence of Staphylococcus aureus strains from atopic dermatitis patients and healthy individuals: insights from global and local scales.
4. A Typical Case of Atypical Disease: "Three Noes" Infective Endocarditis.
5. Antibacterial and Immunosuppressive Effects of a Novel Marine Brown Alga-Derived Ester in Atopic Dermatitis.
6. Two-sample Mendelian randomization analysis identifies a causal association between atopic dermatitis and impetigo.

Dermal Fungal

1. Angiopoietin-like 4 protects against endothelial dysfunction during bacterial sepsis.
2. Type 2 Innate Lymphoid Cells and Skin Fibrosis in a Murine Model of Atopic Dermatitis-Like Skin Inflammation.
3. Photoprotection-related properties of a raw extract from Gordonia hongkongensis EUFUS-Z928: A culturable rare actinomycete associated with the Caribbean octocoral Eunicea fusca.
4. Plasmodium sporozoite shows distinct motility patterns in responses to three-dimensional environments.
5. Unraveling the Potential of Vitamin B(3)-Derived Salts with a Salicylate Anion as Dermal Active Agents for Acne Treatment.
6. Quality by design driven development of lipid nanoparticles for cutaneous targeting: a preliminary approach.
7. In-vivo and in-vitro toxicity evaluation of 2,3-dimethylquinoxaline: An antimicrobial found in a traditional herbal medicine.
8. Revolutionizing Treatment for Topical Fungal Infections: Evaluating Penetration-Enhancer-containing Vesicles as a Fluconazole Delivery system. Ex-Vivo and In-Vivo Dermal Testing.
9. Post kala-azar dermal leishmaniasis burden at the village level in selected high visceral leishmaniasis endemic upazilas in Bangladesh.
10. Unravelling the Complexity of Mucormycosis-A Rare Case Report.
11. Aedes aegypti Mosquito Probing Enhances Dengue Virus Infection of Resident Myeloid Cells in Human Skin.

Competitors

1. Genomic profiling of methicillin-sensitive Staphylococcus aureus (MSSA) isolates in Kuwait hospitals.
2. Hypoxia-inducible factor-1α/vascular endothelial growth factor signaling pathway-based ulcer-healing mechanism of Astragalus Aqueous extract in diabetic foot rats.
3. An Integrated Module Performs Selective 'On-Line' Epoxidation in the Biosynthesis of the Antibiotic Mupirocin.
4. ESCMID/EUCIC clinical guidelines on preoperative decolonization and targeted prophylaxis in patients colonized by multidrug-resistant Gram-positive bacteria before surgery.
5. Recurrent skin and soft tissue infections (SSTIs) in three family members caused by methicillin-resistant Staphylococcus aureus (MRSA) with Panton-Valentine leukocidin (PVL) exotoxin.
6. Reduction of peritoneal dialysis associated infections using a novel exit-site care practice.

Dressings

1. Copper nanoparticles incorporated visible light-curing chitosan-based hydrogel membrane for enhancement of bone repair.
2. Electrospun PCL/PVA/PHMB nanofibers incorporating Ziziphus jujuba fruit extract as promising wound dressings with potent antibacterial and antidiabetic properties.
3. Bacteria-Derived Cellulose Membranes Modified with Graphene Oxide-Silver Nanoparticles for Accelerating Wound Healing.
4. Carbon dots-facilitated on-demand dissolution of Ca-alginate hydrogel via site-specific mineralization for wound healing.
5. Synthesis and analysis of multifunctional graphene oxide/Ag(2)O-PVA/chitosan hybrid polymeric composite for wound healing applications.
6. A novel chlorin derivative Shengtaibufen (STBF) mediated photodynamic therapy combined with iodophor for the treatment of chronic superficial leg wounds infected with methicillin-resistant Staphylococcus aureus: A retrospective clinical study.
7. Injectable antibacterial hydrogels based on oligolysines for wound healing.
8. Design of Scaffolds Based on Zinc-Modified Marine Collagen and Bilberry Leaves Extract-Loaded Silica Nanoparticles as Wound Dressings.
9. Immobilizing DNase in ternary AuAgCu hydrogels to accelerate biofilm disruption for synergistically enhanced therapy of MRSA infections.
10. Cuttlefish ink-derived melanin nanoparticle-embedded tremella fuciformis polysaccharide hydrogels for the treatment of MRSA-infected diabetic wounds.
11. Development of pectin/chitosan-based electrospun biomimetic nanofiber membranes loaded with dihydromyricetin inclusion complexes for wound healing application.
12. Chitosan/agarose hydrogel dressing: pH response real-time monitoring and chemo-/photodynamic therapy synergistic treatment of infected wounds.
13. NIR light-triggered photodynamic antibacterial nanofiber membrane based on polycaprolactone and phthalocyanine derivative for biomedical applications.
14. Synthesis of Cellulose-Based Hydrogel-Nanocomposites for Medical Applications.
15. Chitosan/Hyaluronate Complex-Coated Electrospun Poly(3-hydroxybutyrate) Materials Containing Extracts from Melissa officinalis and/or Hypericum perforatum with Various Biological Activities: Antioxidant, Antibacterial and In Vitro Anticancer Effects.
16. Promoting the healing of infected diabetic wound by nanozyme-containing hydrogel with anti-bacterial inflammation suppressing, ROS-scavenging and oxygen-generating properties.
17. Synergistic berberine chloride and Curcumin-Loaded nanofiber therapies against Methicillin-Resistant Staphylococcus aureus Infection: Augmented immune and inflammatory responses in zebrafish wound healing.
18. Robust, superabsorbent and antibacterial polysaccharide-based hybrid-network hydrogels for wound repair.
19. In-situ synthesis and evaluation of anti-bacterial efficacy and angiogenesis of curcumin encapsulated lipogel dermal patch for wound healing applications.
20. REGECEL (an Oxidized Regenerated Cellulose) Provides Superior Bioactivity Effect on Microorganisms.
21. Electrophoretically deposited Asphaltum punjabianum (Shilajit) coatings on polyvinylalcohol/carboxymethylcellulose hydrogels.
22. Accelerated healing of intractable biofilm-infected diabetic wounds by trypsin-loaded quaternized chitosan hydrogels that disrupt extracellular polymeric substances and eradicate bacteria.
23. Dual-Functional Implant Based on Gellan-Xanthan Hydrogel with Diopside, BMP-2 and Lysostaphin for Bone Defect Repair and Control of Staphylococcal Infection.
24. Purpose-built multicomponent supramolecular silver(I)-hydrogels as membrane-targeting broad-spectrum antibacterial agents against multidrug-resistant pathogens.
25. Tribovoltaic Effect Strengthened Microwave Catalytic Antibacterial Composite Hydrogel.
26. Characterization of gelatin-oxidized riclin cryogels and their applications as reusable ice cubes in shrimp preservation.
27. Bioactive substance contents and therapeutic potential for skin inflammation of an herbal gel containing Derris reticulata and Glycyrrhiza glabra.
28. Photo-crosslinking methacrylated-amylopectin/polyacrylamide hydrogels loading curcumin for applications as degradable, injectable, and antibacterial wound dressings.
29. Double-network polyphenol chitosan hydrogels with instant aldehyde-β-cyclodextrin-based structure as potential for treating bacterially infected wounds.
30. α-Lactalbumin based scaffolds for infected wound healing and tissue regeneration.
31. NH(2)-MXene/OXG nanocomposite hydrogel with efficient photothermal antibacterial activity for potentially removing biofilms.
32. One-Step Physical and Chemical Dual-Reinforcement with Hydrophobic Drug Delivery in Gelatin Hydrogels for Antibacterial Wound Healing.
33. Electrospun nanofibrous wound dressings with enhanced efficiency through carbon quantum dots and citrate incorporation.
34. Preparation of bacterial cellulose/acrylic acid-based pH-responsive smart dressings by graft copolymerization method.
35. HOCl-producing electrochemical bandage is active in murine polymicrobial wound infection.
36. Selenium Bandages and Cotton Cloth That Kill Microorganisms in Wounds.
37. PLGA Nanoparticles Formulations Loaded With Antibiotics Induce Sustained and Controlled Antibiotics Release for Prolonged Antibacterial Action Against MRSA, and Pseudomonas aeruginosa FRD1.
38. Polydopamine-assisted smart bacteria-responsive hydrogel: Switchable antimicrobial and antifouling capabilities for accelerated wound healing.
39. Multifunctional engineering of Mangifera indica L. peel extract-modified bacterial cellulose hydrogel: Unveiling novel strategies for enhanced heavy metal sequestration and cytotoxicity evaluation.
40. Effect of the molar mass of chitosan and film casting solvents on the properties of chitosan films loaded with Mentha spicata essential oil for potential application as wound dressing.
41. Superhydrophobic Dressing for Singlet Oxygen Delivery in Antimicrobial Photodynamic Therapy against Multidrug-Resistant Bacterial Biofilms.
42. Enhancing the porosity of chitosan sponges with CBD by adding antimicrobial violacein.
43. Investigating topical delivery of erythromycin laden into lipid nanocarrier for enhancing the anti-bacterial activity.
44. Chitosan/rutin multifunctional hydrogel with tunable adhesion, anti-inflammatory and antibacterial properties for skin wound healing.
45. The influence of the pectin structure on the properties of hydrogel dressings doped with octenidine-containing antiseptic.
46. Tunicate cellulose nanocrystals strengthened injectable stretchable hydrogel as multi-responsive enhanced antibacterial wound dressing for promoting diabetic wound healing.
47. Synthesis and synergistic antibacterial efficiency of chitosan-copper oxide nanocomposites.
48. [Bacterial Blocking and Repair of Intestinal Defects With Well-Alighed Lamellar MXene/Polyvinyl Alcohol Hydrogels Prepared by Bidirectional Freezing Method].
49. Rational design of self-assembling ultrashort peptides for the shape- and size-tunable synthesis of metal nanostructures.
50. Self-adhesive poly-l-lysine/tannic acid hybrid hydrogel for synergistic antibacterial activity against biofilms.
51. Rhamnus prinoides leaf extract loaded polycaprolactone-cellulose acetate nanofibrous scaffold as potential wound dressing: An in vitro study.
52. Biocide physically cross-linked hydrogels based on carrageenan and guanidinium polyampholytes for wound healing applications.
53. Bioassay-guided fractionation of Verbascum thapsus extract and its combination with polyvinyl alcohol in the form electrospun nanofibrous membrane for efficient wound dressing application.
54. Photothermal-enhanced in situ supramolecular hydrogel promotes bacteria-infected wound healing in diabetes.
55. Particulate 3D Hydrogels of Silk Fibroin-Pluronic to Deliver Curcumin for Infection-Free Wound Healing.
56. Hyaluronic Acid/Gelatin-Based Multifunctional Bioadhesive Hydrogel Loaded with a Broad-Spectrum Bacteriocin for Enhancing Diabetic Wound Healing.
57. Antibacterial and antioxidative hydrogel dressings based on tannic acid-gelatin/oxidized sodium alginate loaded with zinc oxide nanoparticles for promoting wound healing.
58. A chitosan-based hydrogel with ultrasound-driven immuno-sonodynamic therapeutic effect for accelerated bacterial infected wound healing.
59. Enhanced wound healing properties of biodegradable PCL/alginate core-shell nanofibers containing Salvia abrotanoides essential oil and ZnO nanoparticles.
60. A 3D bioprinted antibacterial hydrogel dressing of gelatin/sodium alginate loaded with ciprofloxacin hydrochloride.
61. Combination of bacteriophages and vancomycin in a co-delivery hydrogel for localized treatment of fracture-related infections.
62. Chitosan-carrageenan microbeads containing nano-encapsulated curcumin: Nano-in-micro hydrogels as alternative-therapeutics for resistant pathogens associated with chronic wounds.
63. Development of dual-crosslinked Pluronic F127/Chitosan injectable hydrogels incorporating graphene nanosystems for breast cancer photothermal therapy and antibacterial applications.
64. Bioinspired multifunctional cellulose film: In situ bacterial capturing and killing for managing infected wounds.
65. BrSPR-20-P1 peptide isolated from Brevibacillus sp. developed into liposomal hydrogel as a potential topical antimicrobial agent.
66. Oral Administration of Berberine Hydrochloride Based on Chitosan/Carboxymethyl-β-Cyclodextrin Hydrogel.
67. Biopolymeric Insulin Membranes for Antimicrobial, Antioxidant, and Wound Healing Applications.
68. Antibacterial and Antibiofilm Properties of Native Australian Plant Endophytes against Wound-Infecting Bacteria.
69. The Potential of Fish Oil Components and Manuka Honey in Tackling Chronic Wound Treatment.
70. Antimicrobial Properties and Cytotoxicity of LL-37-Derived Synthetic Peptides to Treat Orthopedic Infections.

Staphylococcal skin infection

1. Multifunctional Nanosystem for Dual Anti-Inflammatory and Antibacterial Photodynamic Therapy in Infectious Diabetic Wounds.
2. Antimicrobial Evaluation of Two Polycyclic Polyprenylated Acylphloroglucinol Compounds: PPAP23 and PPAP53.
3. Integrating multi-wet laboratory diagnostics to study staphylococci in animals in Uganda.
4. Melaleuca alternifolia essential oil in a natural product-based formulation: Antimicrobial and healing effects in Staphylococcus aureus-infected wounds.
5. Comparative safety and efficacy of autogenous vaccine administrated by different routes against furunculosis caused by Aeromonas salmonicida sub. salmonicida in large Rainbow trout (Oncorhynchus mykiss).
6. Vaginal colonization with virulent and methicillin resistant Staphylococcus aureus among Ugandan women in Labour.
7. Mechanistic insights and in vivo efficacy of thiosemicarbazones against methicillin-resistant Staphylococcus aureus.
8. Phenotypic and genomic analysis of the hypervirulent methicillin-resistant Staphylococcus aureus ST630 clone in China.
9. Staphylococcus spp. as part of the microbiota and as opportunistic pathogen in free-ranging black-tuffed marmosets (Callithrix penicillata) from urban areas: Epidemiology, antimicrobial resistance, and pathology.
10. 5-aminolevulinic acid photodynamic therapy for chronic wound infection in rats with diabetes.
11. Staphylococcal Enterotoxins: Description and Importance in Food.

Other news of possible interest