

Active Ingredient Summary Table

Wounds

Active Pharmaceutical Ingredient	Class	Activity on Scar Tissue
Acyclovir	Antiviral	Binds to HSV DNA polymerase in competition with guanosine, is incorporated into viral DNA, and prevents further elongation of the chain
Aloe Vera 200:1 Freeze Dried Powder	Anti-inflammatory; Moisturizer; stimulates epithelialization	Contains anti-inflammatory fatty acids, cholesterol, campersterol and Bsitosterol. Depletes the classical and alternative pathway complement activity, inhibits free oxygen radicals by activating polymorphonuclear leucocytes, thromboxane inhibition, and bradykinin inhibition.
Alpha Lipoic Acid	Antioxidant; Anti-inflammatory	Anti-inflammatory activity occurs by protecting pancreatic islet cells from activated macrophage cytotoxicity and from oxygen radicals released by the endothelial enzyme xanthine oxidase
Ascorbic Acid	Vitamin C; Antioxidant	Reduces redness
Benzocaine	para-aminobenzoic acid ester, anesthetic	Topically applied local anesthetic with low potency and low systemic toxicity
Betamethasone Betamethasone Valerate	Corticosteroids; Anti-inflammatory	Inhibition of ECM inflammatory protein; diminishes pruritus and pain; decreases alpha2 macroglobulin levels to inhibit fibroblast production. Not recommended for older scars or freshly closed wounds.
Beta Glucan	Immune stimulant; antimicrobial	Enhances a broad range of immunological activities that are important in improving host defense mechanisms against microbial infection
Bromelain	Proteolytic enzyme; debriding agent; anti-inflammatory	Debrides wound and necrotic tissue with no side effects or damage to nearby unaffected tissue. Selectively inhibits the biosynthesis of pro-inflammatory prostaglandins, reducing pain and inflammation.

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Wounds

Bupivacaine Hydrochloride	Amide type, anesthetic	Local anesthetic with a slow onset and a long duration of action
Ciprofloxacin Hydrochloride (+)	Fluoroquinolone Antibiotic	Gram-positive aerobic bacteria activity - staphylococci, penicillinase producing and penicillinase-nonproducing strains, MRSA, Streptococci, Streptococcus pneumoniae, enterococci.
Clindamycin Hydrochloride (+)	Lincosamide antibacterial	Active against most aerobic Gram-positive bacteria including staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pyogenes, Streptococcus pneumoniae, Streptococcus viridans, Streptococcus durans, Streptococcus bovis, Clostridia tetani, Clostridia perfringens and Clostridia diphtheria.
Collagenase	Debriding agent	Enzymatic action with high specificity for native and denatured collagen; will not attack collagen in healthy tissue or newly formed granulation tissue.
Gentamicin Sulfate (-)	Aminoglycoside antibiotic	Active against many strains of Gram-negative bacteria including species of Brucella, Calymmatobacterium, Campylobacter, Citrobacter, Escherichia, Enterobacter, Francisella, Klebsiella, Proteus, Providencia, Pseudomonas, Serratia, Vibrio, and Yersinia.
Fluticasone Propionate	Corticosteroids; Anti-inflammatory	Inhibition of ECM inflammatory protein; diminishes pruritus and pain; decreases alpha2 macroglobulin levels to inhibit fibroblast production.
Hyaluronic Acid	Oligosaccharides	Stimulates endothelial cell (EC) proliferation
Hydrocortisone Hydrocortisone Acetate	Corticosteroids; Anti-inflammatory	Inhibition of ECM inflammatory protein; diminishes pruritus and pain; decreases alpha2 macroglobulin levels to inhibit fibroblast production.

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Itraconazole	Triazole antifungal	Active against dermatophytes (Microsporum, Trichophyton), dimorphic fungi (Histoplasma, Blastomyces, Paracoccidioides), yeasts (Candida, Cryptococcus neoformans), and Aspergillus fumigatus.
Ketamine Hydrochloride	Anesthetic; Analgesic	NMDA antagonist
Levofloxacin Hemihydrate (-)	Fluoroquinolone antibacterial	Active against Gram-positive microorganisma including, enterococcus faecalis, Staphylococcus aureus, Streptococcus pneumoniae, Streptococcus pyogenes. Active against Gram-negative microorganisms, including, Enterobacter cloacae, Escherichia coli, Haemophilus influenzae, Haemophilus parainfluenzae, Klebsiella pneumoniae, Legionella pneumophila, Moraxella catarrhalis, Proteus mirabilis, Pseudomonas aeruginosa.
Lidocaine Hydrochloride	Anesthetic	Decreases pain and itching
Loperamide Hydrochloride	Analgesic	μ -opioid receptor agonist
Miconazole Miconazole Nitrate	Imidazole antifungal	Active against Aspergillus, Basidiobolus, Blastomyces dermatitidis, Candida, Clasdosporium, Coccidioides immitis, Cryptococcus neoformans, Dermatophytes, Entomophthora, Histoplasma capsulatum, Madurella mycetomii, Malassezia furfur, Petriellidium boydii, Phialophora, Sporotrichum schenckii
Morphine Sulfate	Narcotic; Analgesic	μ -opioid receptor agonist
Mupirocin	Antibacterial; antifungal	Active against Gram-positive aerobes including, most strains of staphylococci (including meticillin-resistant and multiply-resistant Staph. aureus), streptococci, Listeria monocytogenes and Erysipelothrix rhusiopathiae. Antifungal activity against Candida albicans.

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Neomycin Sulfate (+)	Aminoglycoside antibacterial	Active against nearly all gram negative organisms, with the exception of Pseudomonas aeruginosa and anaerobic organisms, such as bacteroides.
Nifedipine	Circulatory agent	Calcium-channel blocking; Improves blood flow
Papain	Proteolytic enzyme; antiinflammatory	Enzymatic debriding agent
Pentoxifylline	Circulatory agent; Antiproliferative; anti-inflammatory	Inhibits collagen synthesis in dermal fibroblasts; phosphodiesterase inhibitor
Phenytoin	Anti-epileptic, proliferative	Accelerates healing and stimulates epithelization and collagen synthesis
Prilocaine Hydrochloride	Amide type, anesthetic	Anesthetic with slower onset of action, less vasodilator activity, and a slightly longer duration of action the lidocaine.
Sucralfate	Barrier protectant	Creates an acid buffer when exposed to acidic environments and forms insoluble complexes when attend to proteins
Tetracaine Hydrochloride	Analgesic; Anesthetic	Long acting amino ester
Tobramycin (-)	Antibacterial	Active against a narrow spectrum of Gram-negative bacteria, including pseudomonas aeruginosa. Active against Gram-positive staphylococcus aureus.

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Tramadol Hydrochloride	Analgesic	Binds to u-opioid receptor and secondarily it inhibits the reuptake of serotonin and norepinephrine
Triamcinolone Triamcinolone Acetonide	Corticosteroids; Anti-inflammatory	Inhibition of ECM inflammatory protein; diminishes pruritus and pain; decreases alpha2 macroglobulin levels to inhibit fibroblast production.
Urea	Keratolytic; Emollient	Chemical debriding agent that denatures nonviable protein
Vancomycin Hydrochloride (+)	Glycopeptide antibacterial	Active against mainly Gram-positive bacteria, including Staphylococci, notably Staph. aureus and Staph. epidermidis (including meticillinresistant strains), Streptococcus pneumoniae, Str. pyogenes, some strains of Group B streptococci, and the viridans streptococci
Verapamil Hydrochloride	Calcium Channel blocker	Decreases ECM collagen production; induces collagenase synthesis; For treatment of older, non-inflamed scars

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Active Ingredient Summary Table

Wounds

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