

TECHNICAL REPORT

Microbiologic Properties of Cefepime and Cefadroxil mixed with BASSA-GEL™ against selected pathogens was assessed and the results are conveyed here.

Executive Summary: Cefepime (1 vial) and Cefadroxil (1 capsule) (Collectively Referenced as “DRUG”) mixed with BASSA-GEL™ was tested against the identified pathogens and the results of these tests are reported as follows. **Should there be only a “blue-line” reported that means the DRUG was so effective against the pathogen that the detection limit was below the assay of the experiment.** BASSA-GEL™ is an over-the-counter cosmetic water-washable gel commonly used for skin hydration. Usage of BASSA-GEL™, a cosmetic moisturizer product, in conjunction with an actual DRUG can be useful as the water-washable gel can be washed off solely utilizing water without any physical debriding activity generally being required (while also keeping a DRUG in contact with the targeted area).

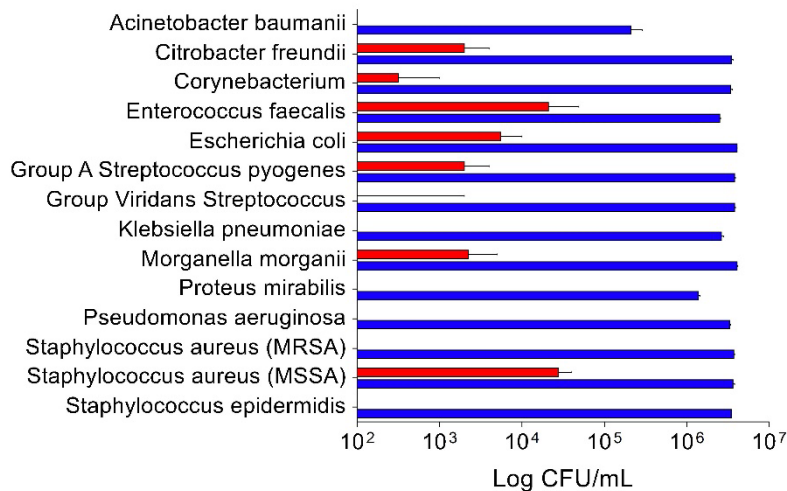
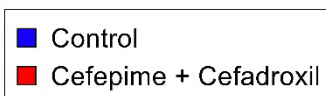
Methods overview: Methods for this laboratory study were adapted from Bearden *et al* and from FDA Docket No. FDA-1975-N-0012.^{1,2} All experiments were performed using the commercially available formulations. Reductions in bacterial counts between agents were determined.

Methods and Results:

Bacterial strains: Pathogens selected are defined in ATCC or CDC AR strains (Table 1, page 2).

Antimicrobial agents: Cefepime 1Gram vial (NDC 60505-6146-04) and Cefadroxil 500mg capsule (NDC 68190-0180-01) – mixed with BASSA-GEL™

Experiment: Pre-sterilized discs were saturated with $1 \times 10^{7-8}$ CFU/mL of bacterial culture, allowed to incubate for 24 hours to mimic *ex vivo* wound infection, exposed to the gel/drug solution or positive control (phosphate buffer saline, PBS), and then incubated aerobically at 37°C for 24 hours. After this time, disks were washed, diluted, and then cultured onto blood agar plates for colony forming unit (CFU/mL) counts using serial dilution spread plate technique. The results are reported below (mean log CFU/mL \pm standard error). As stated above in the executive summary, should there be only a “blue-line” reported that means the DRUG was so effective against the pathogen that the detection limit was below the assay of the experiment.



Interpretation: Cefepime and Cefadroxil with BASSA-GEL™ was tested in a model mimicking a bandaged wound. The experiment demonstrated significant reductions in most gram-negative and gram-positive bacterial species tested.

Table 1. Organisms Included in Testing

| Organism | ATCC number |
|-------------------------------------|--------------------|
| <i>Acinetobacter baumannii</i> | BAA747 |
| <i>Citrobacter freundii</i> | 8090 |
| <i>Corynebacterium striatum</i> | BAA-1293 |
| <i>Enterococcus faecalis</i> | BAA-29212 |
| <i>Escherichia coli</i> | 25922 |
| <i>Klebsiella pneumoniae</i> | BAA-2524 |
| <i>Streptococcus pyogenes</i> | 19615 |
| <i>Morganella morganii</i> | 25830 |
| <i>Proteus mirabilis</i> | CDC AR-29 |
| <i>Pseudomonas aeruginosa</i> | 27853 |
| <i>Staphylococcus aureus (MSSA)</i> | 29213 |
| <i>Staphylococcus aureus (MRSA)</i> | BAA-41 |
| <i>Staphylococcus epidermidis</i> | 12228 |

References

1. Bearden DT, Allen GP, Christensen JM. Comparative in vitro activities of topical wound care products against community-associated methicillin-resistant *Staphylococcus aureus*. *J Antimicrob Chemother* 2008;62:769-72.
2. Huang DB, Okhuysen PC, Jiang ZD, DuPont HL. Enteroaggregative *Escherichia coli*: an emerging enteric pathogen. *Am J Gastroenterol* 2004;99:383-9.



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