

## Article

# Compatibility of Personalized Formulations in Cleoderm™, A Skin Rebalancing Cream Base for Oily and Sensitive Skin

Hudson Polonini <sup>1,\*</sup>, Bruna Marianni <sup>1</sup>, Sarah Taylor <sup>2</sup> and Clark Zander <sup>2</sup>
<sup>1</sup> Fagron BV, Fascinatio Boulevard 350, 3065 WB Rotterdam, The Netherlands

<sup>2</sup> Fagron US, 2400 Pilot Knob Rd. #200, St. Paul, MN 55120, USA

\* Correspondence: hudson.polonini@fagron.com

**Table S1.** Antimicrobial effectiveness testing of the APIs in Cleoderm™.

Microorganism	Active Pharmaceutical Ingredient	Results (CFU/g) / LOG					
		Day 0	Day 180				
		T0	T14	T28	T0	T14	T28
<i>Candida albicans</i>	Benzoyl peroxide 2.5%	1.6 × 10 <sup>5</sup> / 5.20	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	3.6 × 10 <sup>3</sup> / 3.55	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Benzoyl peroxide 10.0%	1.2 × 10 <sup>5</sup> / 5.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.1 × 10 <sup>3</sup> / 3.04	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Retinoic acid 0.025%	4.9 × 10 <sup>5</sup> / 5.69	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	3.9 × 10 <sup>5</sup> / 5.59	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Retinoic acid 0.1%	1.1 × 10 <sup>4</sup> / 4.04	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.5 × 10 <sup>5</sup> / 5.17	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Cyproterone acetate 0.5%	9.5 × 10 <sup>3</sup> / 3.97	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.0 × 10 <sup>5</sup> / 5.00	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Cyproterone acetate 2.0%	1.3 × 10 <sup>4</sup> / 4.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.4 × 10 <sup>5</sup> / 5.14	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Niacinamide 1.0%	5.3 × 10 <sup>5</sup> / 5.72	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.2 × 10 <sup>6</sup> / 6.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Niacinamide 5.0%	1.2 × 10 <sup>5</sup> / 5.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	7.4 × 10 <sup>5</sup> / 5.86	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Spironolactone 1.0%	1.3 × 10 <sup>5</sup> / 5.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	2.0 × 10 <sup>5</sup> / 5.30	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Spironolactone 5.0%	1.0 × 10 <sup>5</sup> / 5.00	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	4.1 × 10 <sup>5</sup> / 5.61	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Metronidazole 0.75%	9.5 × 10 <sup>5</sup> / 5.14	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.3 × 10 <sup>5</sup> / 5.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Metronidazole 5.0%	1.8 × 10 <sup>5</sup> / 5.25	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.3 × 10 <sup>5</sup> / 5.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Tranexamic acid 1.0%	1.2 × 10 <sup>5</sup> / 5.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.6 × 10 <sup>4</sup> / 4.20	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Tranexamic acid 5.0%	2.3 × 10 <sup>5</sup> / 5.36	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	2.9 × 10 <sup>5</sup> / 5.46	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Estriol 0.1%	1.2 × 10 <sup>5</sup> / 5.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	7.1 × 10 <sup>5</sup> / 5.85	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Estriol 1.0%	1.0 × 10 <sup>5</sup> / 5.00	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	5.1 × 10 <sup>5</sup> / 5.70	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Progesterone 0.5%	1.5 × 10 <sup>5</sup> / 5.17	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.4 × 10 <sup>5</sup> / 5.14	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Progesterone 2.0%	1.0 × 10 <sup>5</sup> / 5.00	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.2 × 10 <sup>5</sup> / 5.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
<i>Aspergillus brasiliensis</i>	Benzoyl peroxide 2.5%	8.7 × 10 <sup>3</sup> / 3.93	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.9 × 10 <sup>3</sup> / 3.27	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Benzoyl peroxide 10.0%	2.0 × 10 <sup>3</sup> / 3.30	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	3.2 × 10 <sup>4</sup> / 4.05	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Retinoic acid 0.025%	1.1 × 10 <sup>4</sup> / 4.04	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.7 × 10 <sup>4</sup> / 4.23	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Retinoic acid 0.1%	1.4 × 10 <sup>4</sup> / 4.14	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	6.0 × 10 <sup>3</sup> / 3.77	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Cyproterone acetate 0.5%	2.4 × 10 <sup>3</sup> / 3.38	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.2 × 10 <sup>4</sup> / 4.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Cyproterone acetate 2.0%	1.1 × 10 <sup>4</sup> / 4.04	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.2 × 10 <sup>4</sup> / 4.07	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Niacinamide 1.0%	1.6 × 10 <sup>4</sup> / 4.20	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.0 × 10 <sup>5</sup> / 5.00	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Niacinamide 5.0%	2.7 × 10 <sup>4</sup> / 4.43	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.3 × 10 <sup>5</sup> / 5.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Spironolactone 1.0%	1.7 × 10 <sup>4</sup> / 4.23	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.6 × 10 <sup>5</sup> / 5.20	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Spironolactone 5.0%	1.3 × 10 <sup>4</sup> / 4.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.8 × 10 <sup>5</sup> / 5.25	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Metronidazole 0.75%	1.8 × 10 <sup>4</sup> / 4.25	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	8.0 × 10 <sup>4</sup> / 4.90	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Metronidazole 5.0%	1.4 × 10 <sup>4</sup> / 4.14	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.7 × 10 <sup>5</sup> / 5.23	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Tranexamic acid 1.0%	2.2 × 10 <sup>4</sup> / 4.34	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	6.6 × 10 <sup>3</sup> / 3.81	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0
	Tranexamic acid 5.0%	2.0 × 10 <sup>4</sup> / 4.30	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0	1.3 × 10 <sup>5</sup> / 5.11	<1.0 × 10 / 1.0	<1.0 × 10 / 1.0

		Estriol 0.1%	$1.5 \times 10^4 / 4.17$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.9 \times 10^5 / 5.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Estriol 1.0%	$1.1 \times 10^4 / 4.04$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$5.0 \times 10^4 / 4.69$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Progesterone 0.5%	$4.9 \times 10^4 / 4.69$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.7 \times 10^4 / 4.43$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Progesterone 2.0%	$3.5 \times 10^4 / 4.54$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.2 \times 10^4 / 4.05$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
<i>Escherichia coli</i>		Benzoyl peroxide 2.5%	$9.9 \times 10^5 / 5.99$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.8 \times 10^5 / 5.44$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Benzoyl peroxide 10.0%	$1.4 \times 10^6 / 6.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$4.1 \times 10^5 / 5.61$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Retinoic acid 0.025%	$2.1 \times 10^5 / 5.32$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.2 \times 10^5 / 5.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Retinoic acid 0.1%	$6.1 \times 10^5 / 5.78$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Cyproterone acetate 0.5%	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.9 \times 10^5 / 5.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Cyproterone acetate 2.0%	$5.8 \times 10^5 / 5.76$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$6.5 \times 10^4 / 4.81$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Niacinamide 1.0%	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.2 \times 10^5 / 5.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Niacinamide 5.0%	$3.9 \times 10^5 / 5.59$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.7 \times 10^5 / 5.23$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Spironolactone 1.0%	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Spironolactone 5.0%	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.4 \times 10^6 / 6.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Metronidazole 0.75%	$1.4 \times 10^5 / 5.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.1 \times 10^6 / 6.32$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Metronidazole 5.0%	$1.0 \times 10^5 / 5.00$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.2 \times 10^6 / 6.87$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Tranexamic acid 1.0%	$3.1 \times 10^5 / 5.49$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$4.8 \times 10^4 / 4.68$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Tranexamic acid 5.0%	$1.9 \times 10^5 / 5.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.2 \times 10^6 / 6.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Estriol 0.1%	$1.5 \times 10^5 / 5.17$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$8.1 \times 10^5 / 5.90$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Estriol 1.0%	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$8.7 \times 10^5 / 5.93$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Progesterone 0.5%	$1.4 \times 10^5 / 5.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Progesterone 2.0%	$1.6 \times 10^5 / 5.20$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$9.1 \times 10^5 / 5.95$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
<i>Pseudomonas aeruginosa</i>		Benzoyl peroxide 2.5%	$2.5 \times 10^5 / 5.39$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.9 \times 10^5 / 5.46$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Benzoyl peroxide 10.0%	$2.6 \times 10^5 / 5.41$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.0 \times 10^5 / 5.47$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Retinoic acid 0.025%	$3.3 \times 10^5 / 5.51$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.4 \times 10^5 / 5.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Retinoic acid 0.1%	$3.9 \times 10^5 / 5.59$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.0 \times 10^5 / 5.47$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Cyproterone acetate 0.5%	$7.5 \times 10^5 / 5.87$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Cyproterone acetate 2.0%	$2.1 \times 10^5 / 5.32$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$5.1 \times 10^5 / 5.70$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Niacinamide 1.0%	$1.2 \times 10^5 / 5.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.5 \times 10^5 / 5.17$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Niacinamide 5.0%	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Spironolactone 1.0%	$1.9 \times 10^5 / 5.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.2 \times 10^5 / 5.34$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Spironolactone 5.0%	$1.2 \times 10^5 / 5.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$7.1 \times 10^5 / 5.85$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Metronidazole 0.75%	$1.1 \times 10^5 / 5.04$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$8.8 \times 10^5 / 5.94$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Metronidazole 5.0%	$1.4 \times 10^5 / 5.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$6.1 \times 10^5 / 5.78$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Tranexamic acid 1.0%	$1.6 \times 10^5 / 5.20$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$8.5 \times 10^4 / 4.92$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Tranexamic acid 5.0%	$1.4 \times 10^5 / 5.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.1 \times 10^5 / 5.04$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Estriol 0.1%	$2.7 \times 10^5 / 5.43$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.3 \times 10^5 / 5.51$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Estriol 1.0%	$2.5 \times 10^5 / 5.39$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$4.0 \times 10^5 / 5.60$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Progesterone 0.5%	$1.9 \times 10^5 / 5.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$4.3 \times 10^5 / 5.63$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Progesterone 2.0%	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$6.6 \times 10^5 / 5.81$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
<i>Staphylococcus aureus</i>		Benzoyl peroxide 2.5%	$2.3 \times 10^6 / 6.36$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.0 \times 10^5 / 5.47$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Benzoyl peroxide 10.0%	$2.0 \times 10^6 / 6.30$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.9 \times 10^5 / 5.59$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Retinoic acid 0.025%	$2.1 \times 10^5 / 5.32$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.4 \times 10^5 / 5.38$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Retinoic acid 0.1%	$4.9 \times 10^5 / 5.69$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Cyproterone acetate 0.5%	$1.2 \times 10^5 / 5.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Cyproterone acetate 2.0%	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.4 \times 10^5 / 5.38$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Niacinamide 1.0%	$1.3 \times 10^6 / 6.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.1 \times 10^5 / 5.04$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
		Niacinamide 5.0%	$1.7 \times 10^6 / 6.23$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.5 \times 10^5 / 5.39$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$

Spirolactone 1.0%	$1.2 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.5 \times 10^5 / 5.39$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Spirolactone 5.0%	$1.1 \times 10^5 / 5.04$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.0 \times 10^6 / 6.00$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Metronidazole 0.75%	$1.2 \times 10^5 / 5.07$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.7 \times 10^6 / 6.23$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Metronidazole 5.0%	$1.4 \times 10^5 / 5.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$5.4 \times 10^5 / 5.73$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Tranexamic acid 1.0%	$1.4 \times 10^6 / 6.14$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.3 \times 10^6 / 6.36$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Tranexamic acid 5.0%	$2.0 \times 10^5 / 5.30$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.9 \times 10^6 / 6.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Estriol 0.1%	$2.0 \times 10^5 / 5.30$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$6.9 \times 10^5 / 5.83$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Estriol 1.0%	$1.3 \times 10^5 / 5.11$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$3.8 \times 10^5 / 5.57$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Progesterone 0.5%	$1.7 \times 10^5 / 5.23$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$2.5 \times 10^6 / 6.39$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$
Progesterone 2.0%	$1.1 \times 10^5 / 5.04$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$	$1.9 \times 10^6 / 6.27$	$<1.0 \times 10 / 1.0$	$<1.0 \times 10 / 1.0$

API, active pharmaceutical ingredient; CFU, colony forming units; T, time (days). United States Pharmacopeia <51> for bacteria requires not less than 1.0 log reduction from the initial count at 14 days, and no increase from the 14 days' count at 28 days. For yeasts and molds, it is required no increase from the initial calculated count at 14 and 28 days.