

# AMS Leucidal Liquid



# Cosmetics and Preservatives

- Consumers are looking for natural products that do not contain traditional preservatives.
  - e.g. parabens & phenoxyethanol



# Examples of Preservative/Paraben Free Cosmetics



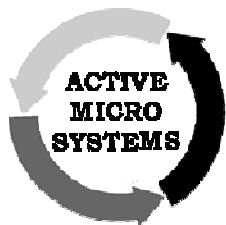
# AMS Leucidal Liquid

- Made by fermenting *Leuconostoc* with radish
- Isolate peptide with antimicrobial activity
- Alternative to traditional preservatives



# Our Inspiration

- Avian Flu Study in Korea
  - Studied Chickens infected with Avian Flu
  - Variable: chickens fed kimchi
  - Control: chickens fed standard feed
  - Results: variable had better rate of recovery



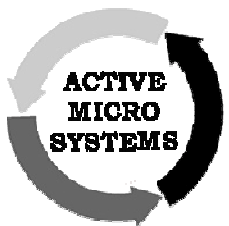
## Not so long ago

- SARS outbreak (2002)
  - Lack of SARS in Korea
- Avian flu (1997-first human case)
- Scientist examined different treatment options



# Avian Flu in the UK

- Recently 3 swans found infected with Avian flu.
- May lead to further interest in Kimchi.



# Marketing Aspects

- Both kimchi and AMS Leucidal are fermented with the same species of bacteria
  - Allows us to capitalize on perceived benefits of kimchi
- Natural ingredient trend
- Peptide trend







# Efficacy Testing

- MIC Test
- Zone of Inhibition Test



# MIC Results

Organism	Initial Test Material Concentration	Last Well Clear (average)	Concentration of test material in last well clear	Minimum Inhibitory Concentration (ppm/product)
<i>S. aureus</i>	100	7	0.781	7.81E+03
<i>A. niger</i>	100	9	0.195	1.95E+03



# Zone of Inhibition

- Confirms pH activity between pH of 1 and 8.



# Challenge Test

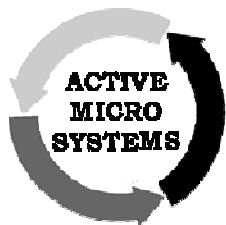
- Tested: 2% AMS Leucidal Liquid in cream base
- Microorganisms used: *S. aureus*(金黃色葡萄球菌), *E. coli*(大腸桿菌), *P. aeruginosa*(綠濃桿菌), *C. albicans*(白色念珠菌), *A. niger*(黑麴菌), *K. pneumoniae*(肝炎原克萊桿菌), *B. cepacia*(鞭毛桿菌)
- Double Inoculation after 28 days (total 56 days)



## Challenge Test Results

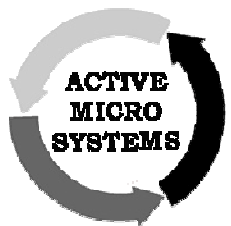
	<i>S. aureus</i>	<i>E. coli</i>	<i>P. aeruginosa</i>	<i>C. albicans</i>	<i>A. niger</i>	<i>K. pneumoniae</i>	<i>B. cepacia</i>
Inaculum Level (initial)	2.02E+06	2.37E+06	2.33E+06	9.46E+05	2.97E+05	2.79E+06	1.98E+06
Day 0	+1.485%	5.485%	28.755%	39.535%	87.542%	6.810%	>99.999%
Day 1	>99.999%	>99.999%	>99.999%	>99.999%	90.404%	>99.999%	>99.999%
Day 2	>99.999%	>99.999%	>99.999%	>99.999%	92.256%	>99.999%	>99.999%
Day 3	>99.999%	>99.999%	>99.999%	>99.999%	94.108%	>99.999%	>99.999%
Day 7	>99.999%	>99.999%	>99.999%	>99.999%	99.663%	>99.999%	>99.999%
Day 14	>99.999%	>99.999%	>99.999%	>99.999%	99.663%	>99.999%	>99.999%
Day 21	>99.999%	>99.999%	>99.999%	>99.999%	99.789%	>99.999%	>99.999%
Day 28	>99.999%	>99.999%	>99.999%	>99.999%	99.987%	>99.999%	>99.999%
Inaculum level (re-inoculated)	1.16E+06	2.57E+06	2.212E+06	7.03E+06	2.48E+05	1.23E+06	2.18E+06
Day 0	50.690%	38.132%	42.453%	37.127%	13.306%	7.317%	>99.999%
Day 1	>99.999%	>99.999%	>99.999%	>99.999%	17.339%	>99.999%	>99.999%
Day 2	>99.999%	>99.999%	>99.999%	>99.999%	37.500%	>99.999%	>99.999%
Day 3	>99.999%	>99.999%	>99.999%	>99.999%	84.879%	>99.999%	>99.999%
Day 7	>99.999%	>99.999%	>99.999%	>99.999%	94.758%	>99.999%	>99.999%
Day 14	>99.999%	>99.999%	>99.999%	>99.999%	96.371%	>99.999%	>99.999%
Day 21	>99.999%	>99.999%	>99.999%	>99.999%	96.371%	>99.999%	>99.999%
Day 28	>99.999%	>99.999%	>99.999%	>99.999%	99.113%	>99.999%	>99.999%

Table 1. Challenge Test results for 2% AMS Leucidal Liquid in O/W emulsion inoculated on day 0 and re-inoculated on day 28.



# Challenge Test

- 2% AMS Leucidal Liquid successfully inhibited microbial growth



# Formulation Guidelines

- Add on cooling to temperatures 60°C and below
- Optimal pH range: 1 – 8



# Formulation Example

Ingredient	Trade Name/Vendor	%
<b>Phase I</b>		
Water & Ethylhexyl Methoxycinnamate & Glycerine & Ethylhexyl Salicylate & Benzophenone 3 & Cetearyl Alcohol & Cetearth 20 & Glyceryl Stearate & PEG 100 Steareth 2 & Dimethicone & Ceteth 24 & Choleth 24 & Phenoxyethanol & Isopropylparaben & Isobutylparaben & n-Butylparaben & Disodium EDTA	Nano-Emulsion Concentrate SUN/Active Concepts, LLC	QS
Salix Alba (Willow Bark Extract	ABS White Willow Bark Extract Powder/Active Concepts LLC	2.00
Glycerin	Glycerin	7.00
Polysorbate 80	Polysorbate 80/Rita Corp.	8.00
<b>Phase II</b>		
<b>Lactobacillus/Arundinaria gigantea Leaf Ferment Filtrate</b>	<b>ACB Bamboo Isoflavones</b>	5.00
<b>Phase III</b>		
Saccharomyces/Capsicum Annum Fruit Ferment Extract	AC DermaPeptide Micro C/Active Concepts, LLC	2.00
Water & Citrus Medica Limonum (Lemon) Peel Extract	ABS Lemon Peel Extract/Active Concepts, LLC	1.00
Water & Butylene Glycol & Ethoxydiglycol & Ferula Foetida Root Extract	ABS Ferula Foetida Extract/Active Concepts, LLC	1.00
Lactobacillus/Dipteryx Odorata Seed Ferment Filtrate	ACB Tonka Bean Bioferment	2.00
Polymethylsilsesquioxane	SilDerm SQ/Active Concepts, LLC	1.00
Leuconostoc/Radish Root Ferment Filtrate	AMS Leucidal Liquid/Active Micro Systems	2.00



# Processing Guidelines

- Phase I: Charge Nano-Emulsion Concentrate SUN into main vessel and begin propeller mixing. A vortex should form. Sift in ABS White Willow Bark Extract Powder. Mix for 10 minutes. Charge Glycerin and Polysorbate 80.
- Phase II: Add to main.
- Phase III: Add AMS Leucidal Liquid on cooling.



**dermalogica**<sup>®</sup> a skin care system researched and developed by The International Dermal Institute

- Recently incorporated AMS Leucidal Liquid into an entire anti-inflammatory skin care line



# GENTLE EYE GEL 溫和眼膠



- **Ingredients:** Water (Aqua), Glycerin, Sclerotium Gum, Algae, Pullulan Extract, **Leuconostoc/Radish Root Ferment Filtrate**, Lonicera Caprifolium (Honeysuckle) Flower Extract, Acacia Senegal Gum and Tara Gum, Codium (Green Seaweed) Extract, Arctium Lappa (Great Burdock) Root Extract, Citrullus Lanatus (Watermelon) Fruit Extract, Peucedanum Osthuthium (Masterwort) Leaf Extract, Plantago Lanceolata (Plantain) Leaf Extract, Himanthalia Elongata (Algae) Extract, Populus Tremuloides Bart Extract, Citric Acid.

Lashes To Die For Night Time Eyelash Conditioning Treatment 夜間  
睫毛增長液



**Ingredients:**

Water, Aloe Barbadensis Leaf Juice, Panthenol, Retinyl Palmitate, Ascorbyl Palmitate, Tocopheryl Acetate, Phospholipids, Sodium Hyaluronate, Hydrolyzed Glycosaminoglycans, Glycerin, Propylene Glycol, Acrylates/C10-30 Alkyl Acrylate Crosspolymer, C12-15 Alkyl Benzoate Cyclodextrin N-[2-Hydroxy-1-Hydroxymethyl)Ethyl]-9-Oxo-11. Alpha., 15s-Dihydroxy-17-Phenyl-18,19,20-Trinor-Prosta-5z,13e-Dien-1-Amide, Triethanolamine, **Leuconostoc/Radish Root Ferment Filtrate**, Alcohol

# AMS Leucidal Liquid

- Code: M15008
- INCI Name: Leuconostoc/Radish Root Ferment Filtrate
- INCI Status: Proposed
- Suggested Use Level: 0.5 – 2.0%
- Suggested Application: Anti-microbial

