



# BIORAN NP-200R

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## Product Introduction

BIORAN NP-200R is complex natural preservative from natural plants, it can substitute for synthetic preservative which can irritate the skin. After screening 4 kinds of plants which are well-known for antibacterial activity, we extracted and separation antimicrobial compounds under optimum condition. It is concentrated antibacterial product.

It has antibacterial activity against not only bacteria but also various germs including mold and mycete. As it has stable pH value, it can be used for a variety of cosmetics.

# BIORAN NP-200R

## Features



- ◆ Natural preservative from natural plants
- ◆ Alternative synthetic preservative
- ◆ Containing nutrition elements of plants
- ◆ Easy storage and safety for skin
- ◆ Wide Anti-microbial activity (Bacteria, yeast, etc)

# BIORAN NP-200R

## Composition

Plant Name	Components	Function
Lonicera japonica Flower Extract	Luteoline Quercetin chlorogenic acid	<b>Anti microbial effect:</b> Inhibition the formation of Staphylococcus aureus, dysentery bacillus, colon bacillus <b>Anti inflammatory effect:</b> control inflammation proliferation
grapefruit Extract	Flavanones Phenolic acids Eriodictyol Naringin	Weakening function of cell wall and membrane of microorganism and inhibition enzyme activity Disinfection by interrupting proliferation mechanism
Lichen Extract	Tannins Barbatic acid Sekikaic acid Usnic acid	Usnea is a kind of lichen and nourished with resin. It has grown wild from BC and well-known for vitality and medical properties.
Basil Extract	linalool 1,8-cineole P-anisic acid Amphene cineole	<b>Anti microbial &amp; Anti itch effect:</b> Improve allergic symptoms It is effective for an insect bite .

# Antibacterial Test I (Paper Disc Method)

## EFFICACY

## Preparation of Antimicrobial Test

### \* Culture medium cultivation condition

Scientiphic Name	Type	Incubation Temperature	Incubation Time	Incubation Media
Staphylococcus aureus	Gram (+) bacteria	37 °C	24h	Nutrient Broth
Escherichia coli	Gram (-) bacteria	37 °C	24h	Nutrient Broth
Pseudomonas aeruginosa	Gram (-) bacteria	37 °C	24h	Nutrient Broth
Candida albicans	Yeast	37 °C	48h	Yeast mold Broth
Aspergillus brasiliensis	Mold	37 °C	7 Days	Potato dextrose Broth

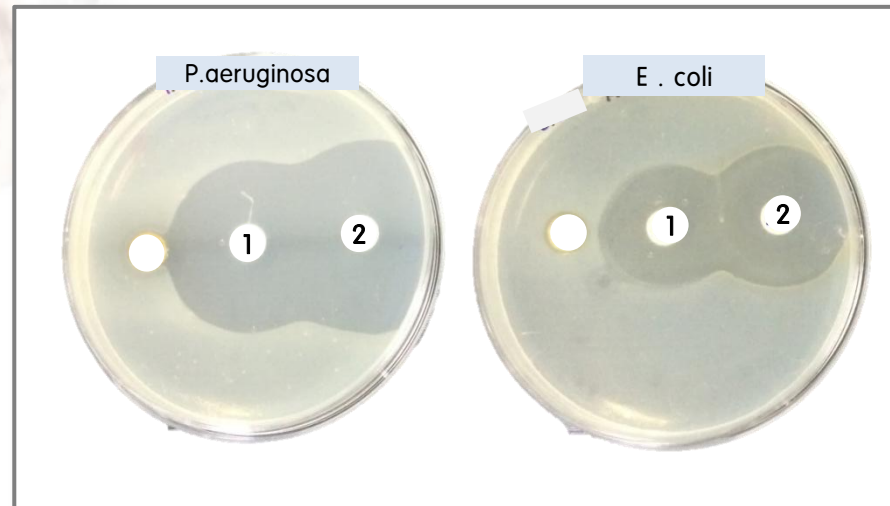
# Antibacterial Test I (Paper Disc Method)

## EFFICACY

### Test Method

A standardize inoculum is inoculated on the surface of the agar plate.  
The sample 30 $\mu$ L are placed on the surface of agar plate.  
The plates are incubated for 24 hours and measure the clear zone.

## Paper disc Result



1. BIORAN NP-200R 2. BIORAN NP-200

➤ It was proved that Bioran NP-200 and NP-200R have antibacterial activity against Gram (-) Bacteria.

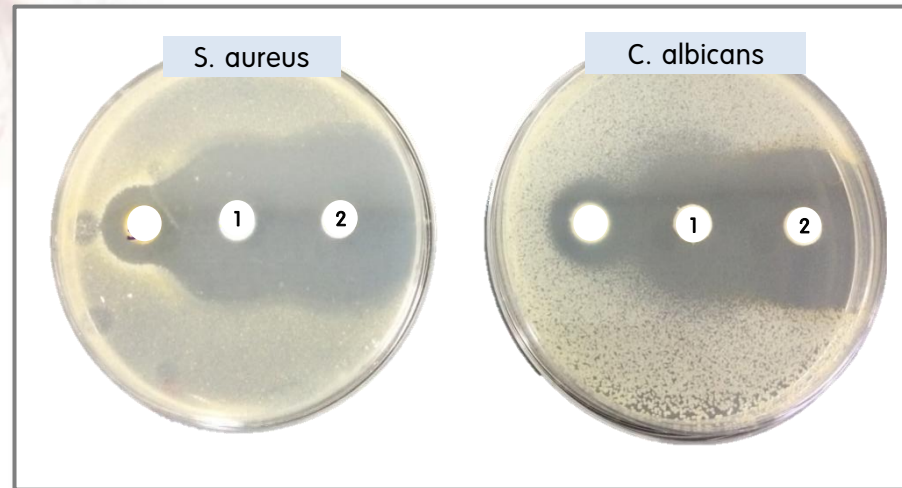
# Antibacterial Test I (Paper Disc Method)

## EFFICACY

### Test Method

A standardize inoculum is inoculated on the surface of the agar plate.  
The sample 30 $\mu$ L are placed on the surface of agar plate.  
The plates are incubated for 24 hours and measure the clear zone.

## Paper disc Result



1. BIORAN NP-200R 2. BIORAN NP-200

➤ It was proved that Bioran NP-200 and NP-200R have antibacterial activity against Gram (+) Bacteria and Yeast (Candida).

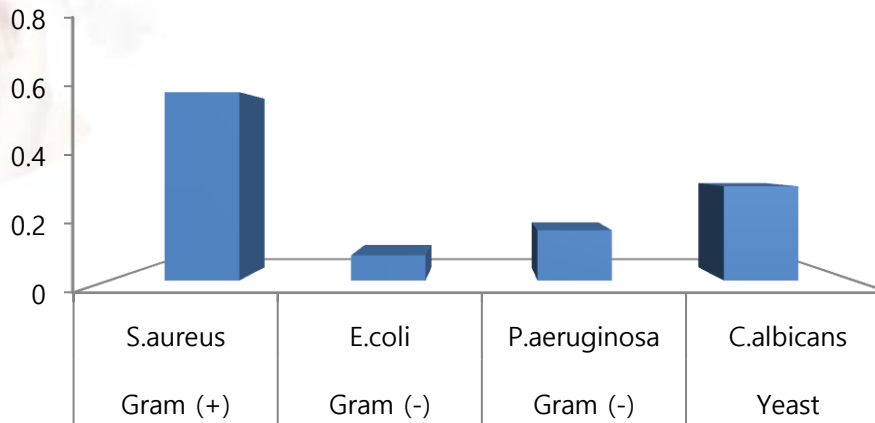
# Antibacterial Test II (MIC)

## EFFICACY

### Test Method

Put pre-cultivated test strain.  
Dilute sample for each concentration  
Check if microbial growth are restricted by measuring before and after 24 hours of cultivation.

## MIC (Minimum Inhibitory Concentration) Test Result



	S.aureus	E.coli	P.aeruginosa	C.albicans
Phenoxyethanol	0.6	0.6	0.6	0.8
BIORAN NP-200R	0.6	0.08	0.16	0.3

➤As the result of MIC test, Bioran NP-200R has better antibacterial activity than Phenoxy Ethanol. .



# Antibacterial Test III (PET)

## EFFICACY

### Test Method

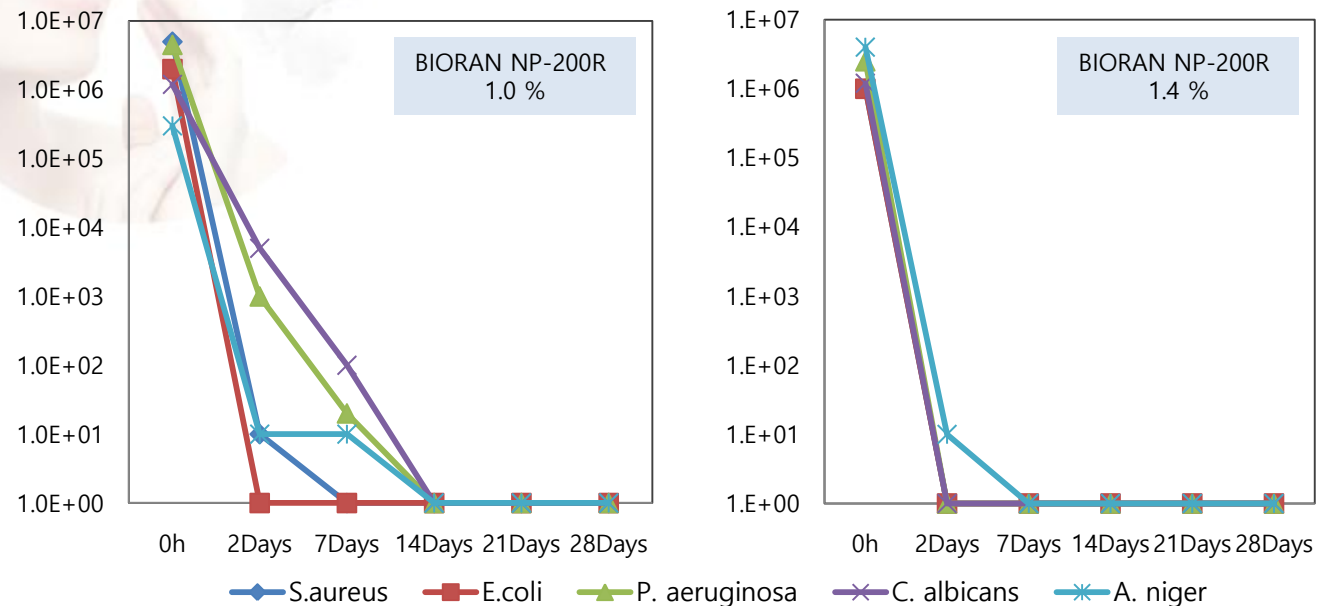
(Modified ISO11930)

Prepare products containing 1.0% of Bioran NP-200R and 1.4% of Bioran NP 200R.

The products are separated out into 5 containers, each being challenged with one of the 5/ml)method-specified microorganism.

Check if the number of microorganisms is decreased by measuring after 7, 14 and 28 days.

## Preservative Efficacy Test Result



➤ It was proved preservative efficacy in case of using more than 1.0% of Bioran NP-200R.

# BIORAN NP-200R

## SPECIFICATIONS

ITEMS	SPECIFICATIONS
1. Appearance	Light yellow
2. Odor	characteristic
3. pH	$8.0 \pm 1.0$
4. Refractive Index	1.3 ~ 1.4
5. Specific Gravity	1.00 ~ 1.10
6. . Heavy Metals	Pb : $\leq 20$ ppm As : $\leq 2$ ppm
7. Micro Organism	$\leq 100$ cfu/ml
★ Storage Conditions	Keep airtight container in a cool, dark place.
★ Use Level	Above 1.2% if it is used as only preservative
★ Other	Stable at pH $6.5 \pm 1$