

# Natural Preservative

## B M B-CF

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Abstract No. KP20030034

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### Description

BMB-CF has been constituted of purified fractions of *Scutellaria baicalensis*, which has medicinal effect such as anti-microbial, anti-inflammation, fever remedy, anti-oxidation, and anti-aging effect etc.. It has been used in traditional medicine formula from long time ago in the east Asia. It is constituted of the active flavone ingredients such as baicalin, baicalein, DTF(Di-methyl Tetra-hydroxy Flavone), wogonin, wogonoside,  $\beta$ - Sitosterol. etc.. General purified fractions of *Scutellaria baicalensis* has the high portion of the baicalin which has the problem of narrow antimicrobial spectrum and compatibility against cosmetic formula. Now, we has been develop the new purificaton process of *Scutellaria baicalensis* that has the high rate of DTF content, which is improved in antimicrobial activity and cosmetics compatibility. So, we have assure that it is the potent preservative against various cosmetic formula.

### Properties

- 1) Antimicrobial Broad Spectrum
- 2) Anti-oxidation & Anti-aging Activity
- 3) Safe for Dermal Application
- 4) INCI Name : *Scutellaria* root extract (EINECS No. : 304-845-9)
- 5) Appearance : Brown liquid & Mild Odour

### Patent pending

- 1) KP 2001-0006372 & KP 2002-0044767
- 2) JP 2002-277518 USP2002-256957

### Applications

- 1) Cosmetic & Food Preservative
- 2) Disinfectants & Oral Hygiene
- 3) Veterinary & Pet Care

### Storage & Pack Size

Stored in a cool, dry place away from direct sun light  
20kg & 100kg

### Recommended Usage

1.5% (Add to the final step of formulation process)

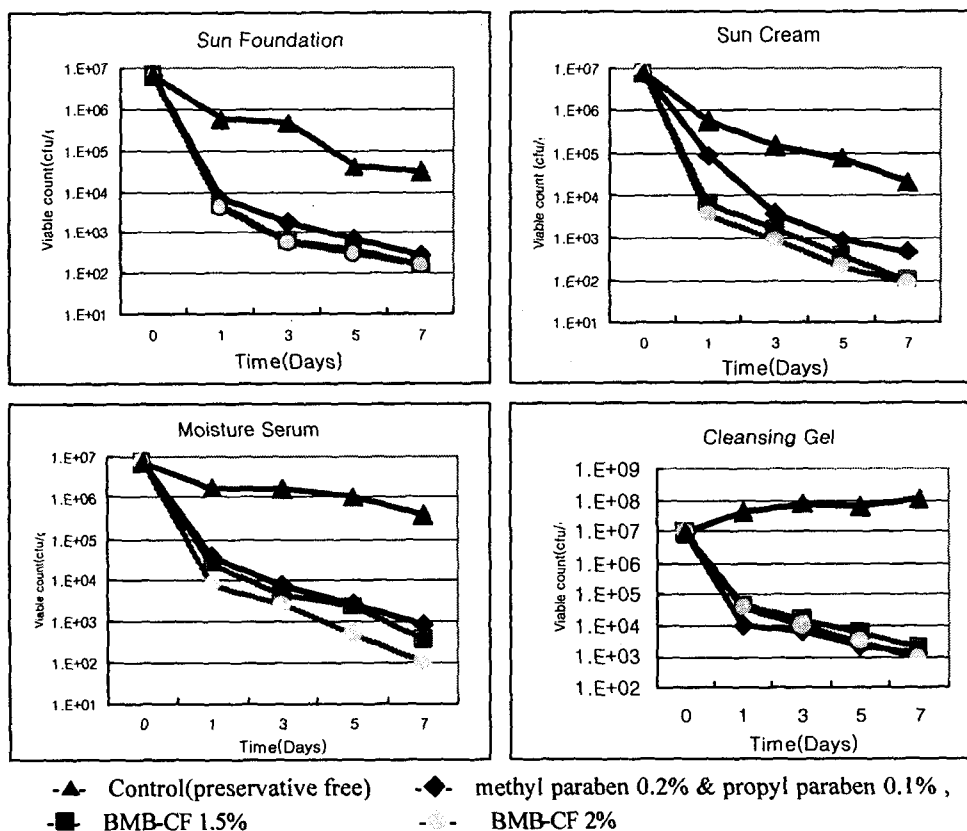
# MIC & Challenge Test

## Antimicrobial Activities of BMB-CF

Microorganisms	MIC(%)
S. aureus ATCC29213	0.156
E. coli ATCC25922	0.156
S. typhimurium ATCC14028	0.625
C. albicans ATCC32354	0.08

## Antimicrobial Activities in Challenge Test

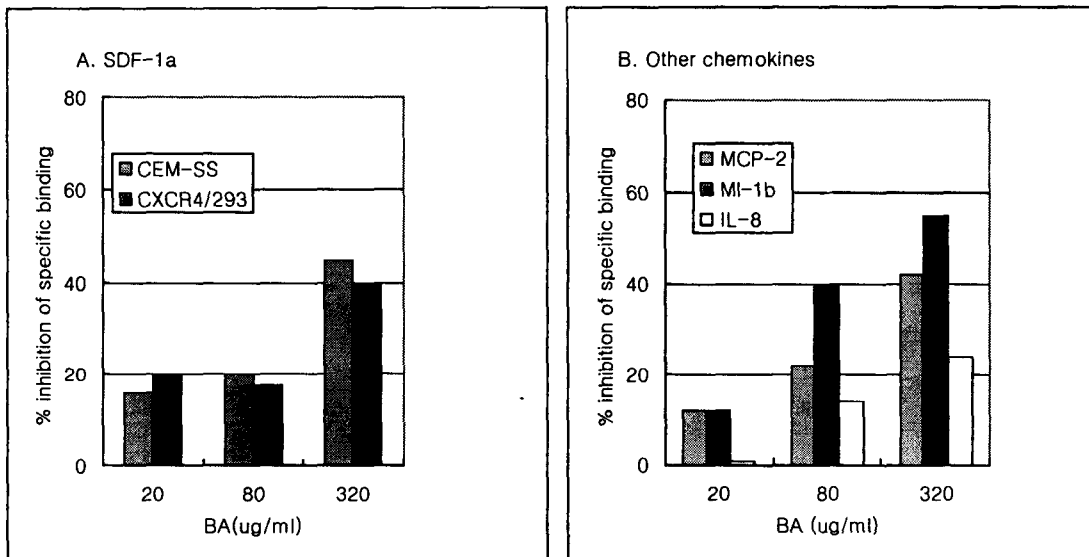
Preservative activities of BMB-CF against challenge microorganisms in various cosmetic formula



## Chemokine Binding Test

To examine whether BA could inhibit chemokine binding to human leukocytes, we first added scutellaria extract(BA) simultaneously with radiolabeled CXC chemokine SDF-1 $\alpha$  to the CEM-SS cells or HEK293 cells which were transfered to express specific chemokine receptor CXCR4 for SDF-1 $\alpha$ .

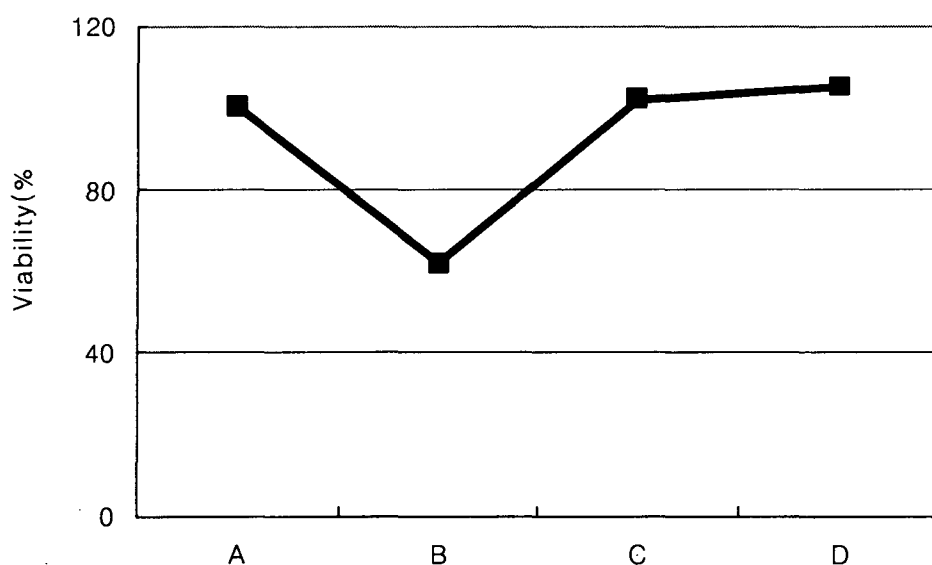
(B.Q. Li, J.M. Wang : Immunopharmacology, 49, 295-306, 2000)



<sup>125</sup>I-labeled chemokines were simultaneously added into cells with different concentrations of BA. The mixtures were incubated at room temperature for 1hr and pelleted through a sucrose cushion. It shows that the scutellaria extract has inhibit of chemokine binding to human cells.

Molecular Cell Biology Lab. Dept. Biology, Kyungbuk Natl. Univ., Korea

## Cell viability test of BMB-CF in HNE-treated BPAE



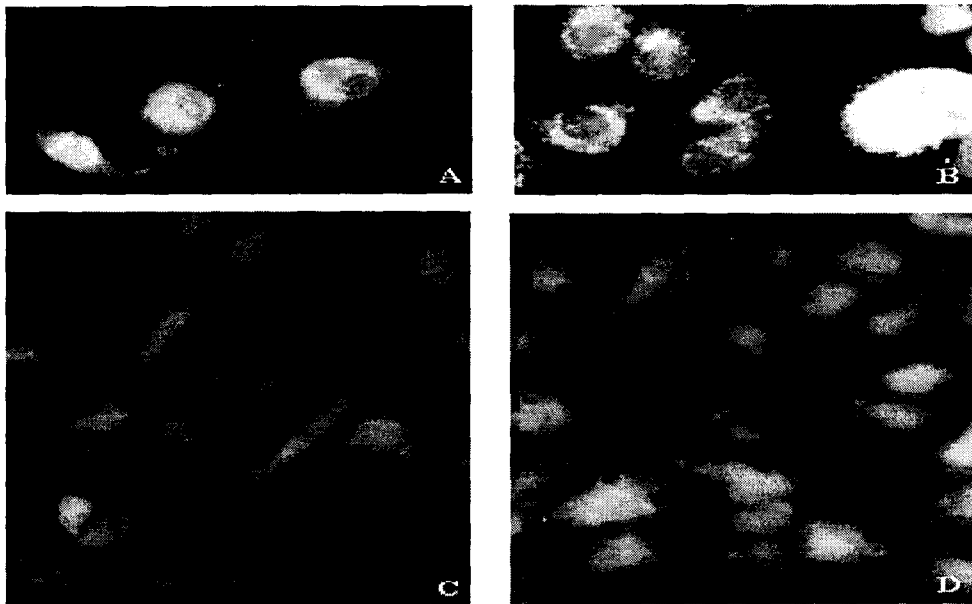
- A) Control(4-HNE, No Treatment)
- B) The cells were treated with 4-HNE for 12hrs
- C) They were treated with BMB-CF(10ug/ml) for 12hrs after treating with 4-HNE for 12hrs
- D) They were treated with BMB-FS (10ug/ml) for 12hrs after treating with 4-HNE for 12hrs

\* BPAE : Bovine pulmonary artery endothelial cells

The BPAE was treated with 4-HNE as oxidant and add BMB-CF then tested the cell viability. The optimal antioxidative activity was achieved above 10ug/ml of BMB-CF..

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## Cell protective activity of BMB-CF against 4-HNE induced apoptosis BAEC



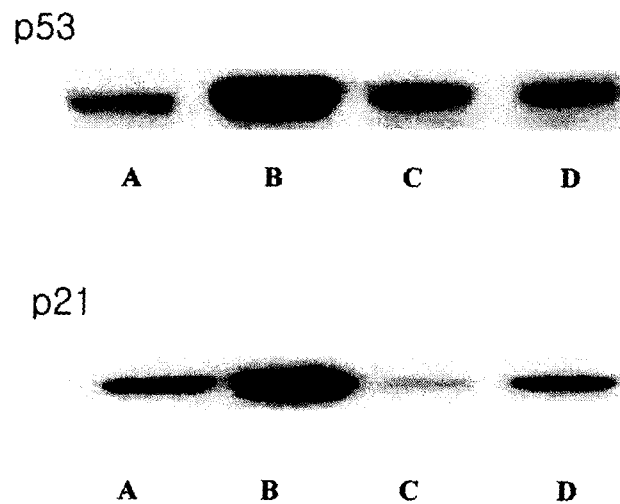
- A) Control(4-HNE, No Treatment)
- B) The cells were treated with 4-HNE for 12hrs
- C) They were treated with BMB-CF(10ug/ml) for 12hrs after treating with 4-HNE for 12hrs
- D) They were treated with BMB-FS(10ug/ml) for 12hrs after treating with 4-HNE for 12hrs

\* BAEC : Bovine aortic endothelial cells

Fig. B was show the pink yellow precipitation regions which indicated the apoptosis by 4-HNE. The apoptosis inhibition activity was achieved above 10ug/ml of BMB-CF as which show the cell recovery activity in Fig. C, D.

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### Anti-aging activity of BMB-CF against SNP treated MCF-7 cells



- A) Control(SNP, No Treatment)
- B) The cells were treated with SNP for 12hrs
- C) They were treated with BMB-CF(10ug/ml) for 24hrs after treating with SNP for 12hrs
- D) They were treated with BMB-FS(10ug/ml) for 24hrs after treating with SNP for 12hrs

- \* SNP : Sodium Nitro Prusside
- \* MCF-7 : estrogen receptor-positive human breast cancer cells

BMB-CF treated MCF-7 cells reduced p53 and p21 protein level which involved in cell death. It shows that BMB has the anti-aging activity above 10ug/ml of BMB-CF.

**IDENTITY**

-Product name : BMB-CF  
 -Manufacturer : Bioskintech Inc.  
 1 FL, BIOMEDPARK, Choog-Ri, Kusung-Eup, Youngin-Shi,  
 Kyunggi-Do, Korea

**COMPOSITION AND INFORMATION OF INGREDIENTS**

-EINECS No. : 304-845-9  
 -Hazardous ingredients : None  
 -INCI Name : Scutellaria root extract

**FIRE AND EXPLOSION DATA**

-Extinguishing media : None Known  
 -Unsuitable extinguishing media : None Known

**HEALTH HAZARD DATA**

-Health Hazards : Not considered to be hazardous. Non-irritant  
 -Effect of Over Exposure : None Known  
 -Emergency First Aid Procedures: Rinse eyes and skin with plenty of water

**HANDLING AND STORAGE**

-Handling precaution : Avoid eye contact and inhalation  
 -Storage precaution : None  
 -Other information : Keep the product in clean, cool, and dark place

**STABILITY AND REACTIVITY**

-Conditions to avoid : None Known  
 -Materials to avoid : None Known  
 -Hazardous decomposition products : None Known

**TOXICOLOGICAL INFORMATION**

-Skin contact : Neither irritative nor sensitizing  
 -Eye contact : No irritative  
 -Inhalation : No toxic after oral ingestion

**DISPOSAL CONSIDERATIONS**

-Product disposal : Flush with plenty of water into the sewage system  
 -Packaging disposal : Dispose of in a manner in accordance with local and national regulations



## Product Specification

Bioskintech Inc.

449-916 , 1 FL, BIOMEDPARK, Choog-Ri, Kusung-Eup,  
Youngin-Si, Kyunggi-Do, Korea

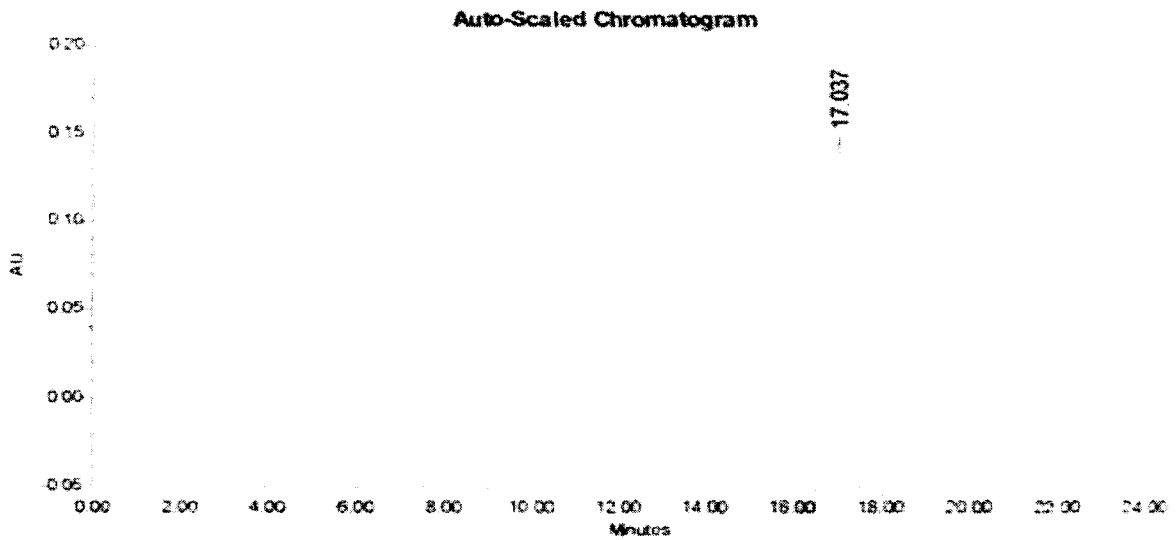
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e-mail : [bioskintech@relaxskin.com](mailto:bioskintech@relaxskin.com)

Remark	Product Specification
Lot Number	<b>BMB-CF ( Lot No. 030519)</b>
Recommended Usage	1.5%
pH	4.2
Safety	LD <sub>50</sub> : > 5g/kg (p.o.) , non-irritant for skin
E. Coli	Negative
Heavy Metals	Negative
Storage	Stored in a cool and dry place away from direct sun light.

## HPLC Chart (Baicalin)



**Peak Results**

	Name	RT	Area	Height	Amount	Units
1		17.037	9678315	145104		

## HPLC Analysis

- 1) Solvent : Acetonitrile : 0.5% Phosphoric acid (27:73, v/v)
- 2) Column : u-Bondapak C18 silica column (3.9x30cm)
- 3) Elution : 15ul injection, 280nm detection, 1.0ml/min.