

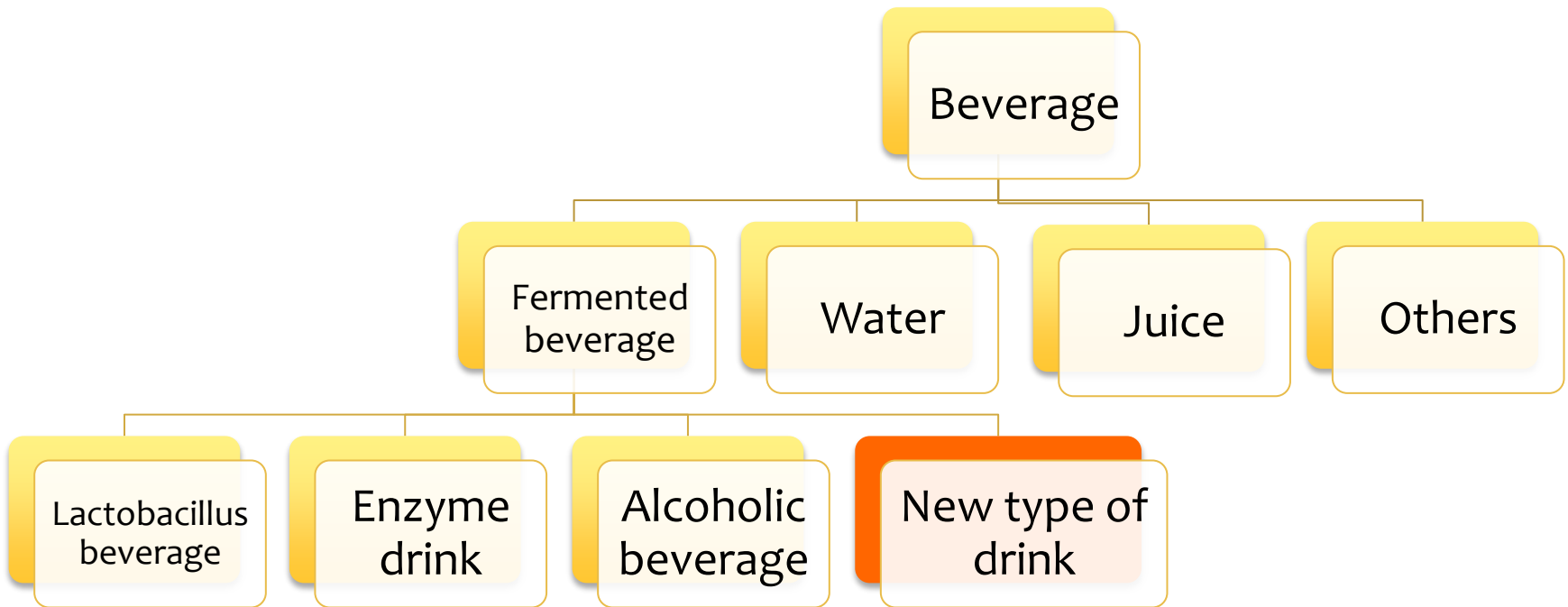
What is EM-X GOLD ?

July 2014
EMRO

Package Renewal



A New Type of Health Drink



Conventional fermented food



Milk

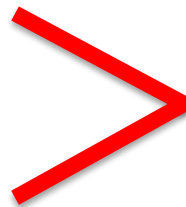
Ferment



Yogurt

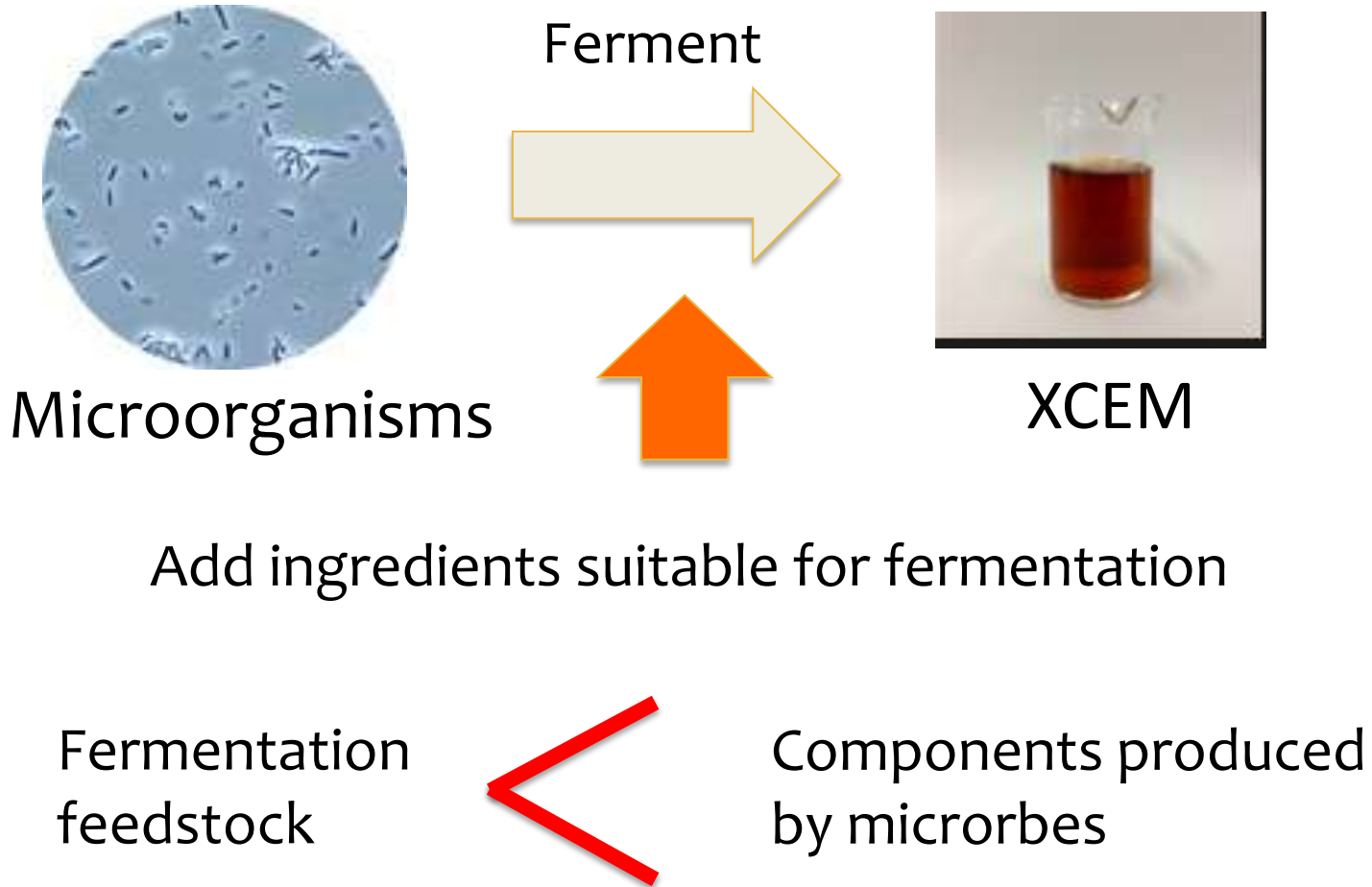
Part of the Milk constituents changed during fermentation

Milk constituents



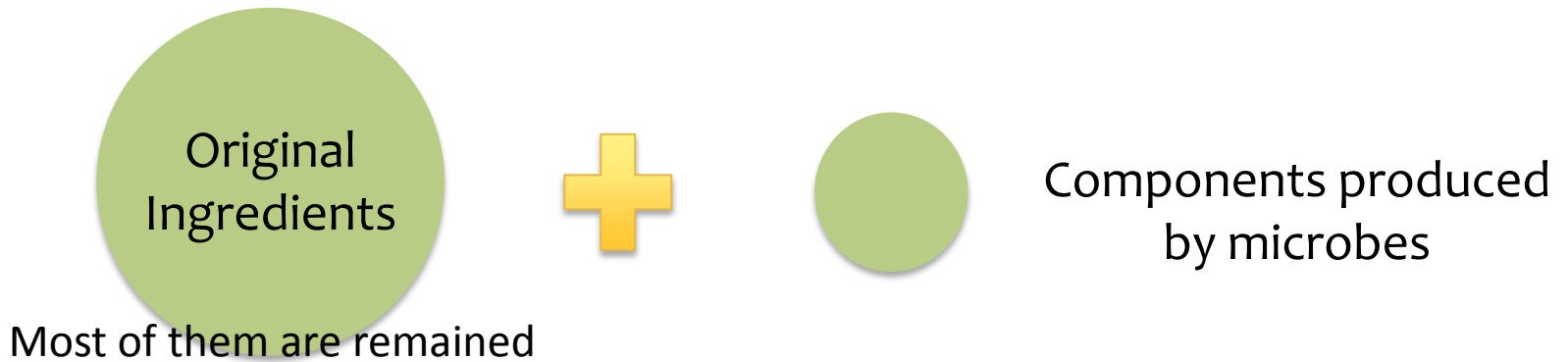
Constituents produced
by microbes

NEW fermentation procedure

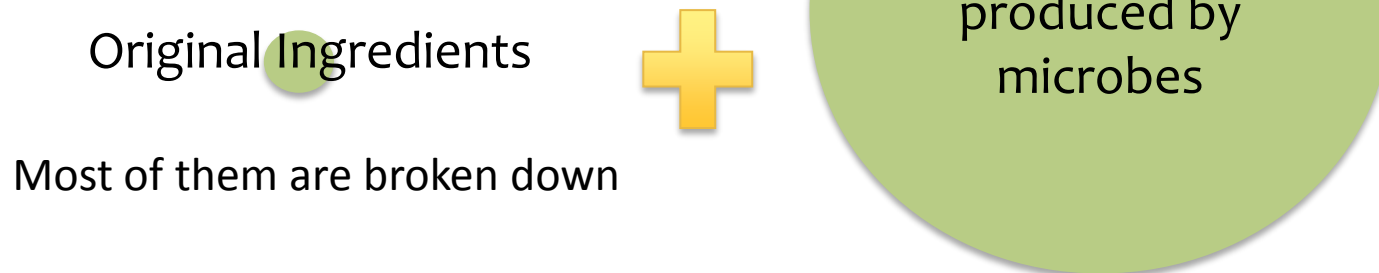


Comparing Fermentation

Conventional fermented food/beverage



New fermented beverage



What is XCEM?

- ❖ EM-X GOLD's main ingredient is XCEM, the fermentation extract of beneficial microbes such as lactic acid bacteria, yeast and photosynthetic bacteria.



XCEM

XCEM = Xtract from Culture of Effective Microorganisms

Raw Materials of XCEM

Feedstock that will enhance microbiological growth

Molasses

Contains sugar, amino acid, organic acid which is perfect for microbiological growth.

Yeast Extract

Rich in nutrients for microorganisms.

Crude sea magnesium chloride (nigari)

Nigari from seawater.
Rich in minerals.

Coral Calcium

Calcium derived from fossilized coral. Rich in other minerals as well.

Application of XCEM

- ❖ XCEM is core technology of EMRO
- ❖ EM·X GOLD is made from XCEM

We can use XCEM as raw material to make EM·X GOLD, EM Water, EM salt, and even for cosmetics.



Products containing XCEM

The research of XCEM has been conducted.

If we can get any good results of XCEM, we can use them as tools to sell XCEM-containing products because these products are made from XCEM.

Characteristics of EM·X GOLD

Zero calories & zero caffeine

Safe for everyone

Enhance total
immunity system
of human body



High
penetration

Tasteless & odorless

1. Zero calories & zero caffeine

Can be consumed by anyone, anytime. From children to seniors, during meals, before bed, etc.

Anyone (children to elderly persons) can drink.



2. Tasteless and Odorless

Tasteless and odorless



Mix it in water, in tea, or
even in your food



Share it with the whole
family



New way of consuming



Drink it straight



In drink



In food

3. High Penetration

The size of proteins are measured in molecular weight (Da) and anything lower than 10,000 is considered to be low molecular weight.

Most of the components
are produced by microbes



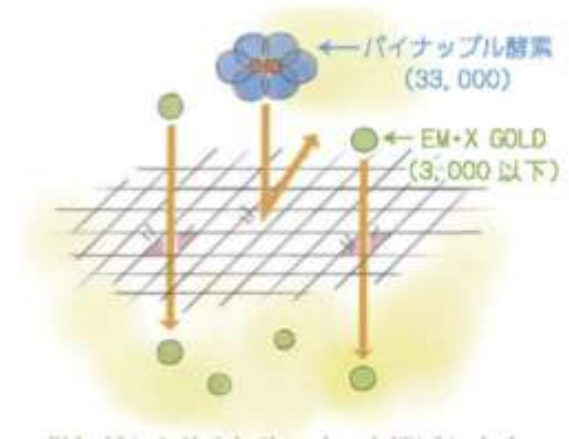
Low molecular
components



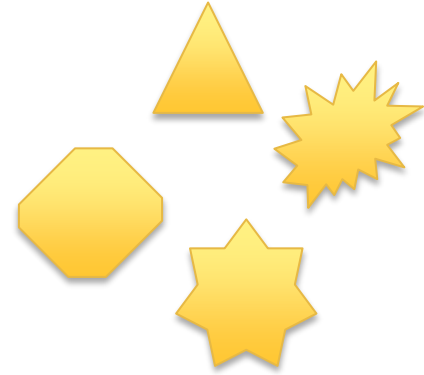
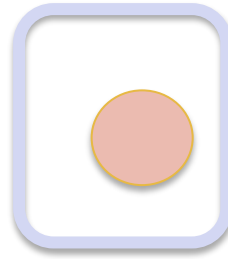
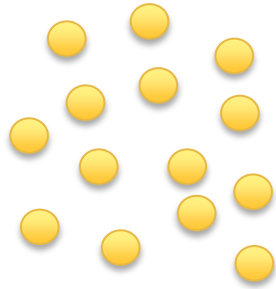
Easily penetrate cells



High permeability



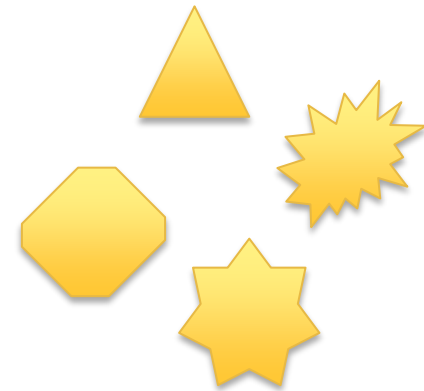
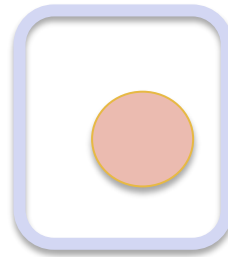
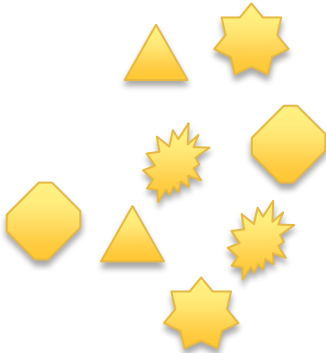
Why low molecular is good?



Mineral based compounds
(inorganic substances)

Cell

Organisms **cannot absorb**
these substances **easily**



Low molecular organic
substances

Cell

Organisms **can absorb**
these substances

Easy to re-build organic substances

Cell Penetration Test

Water

Ultrapure water

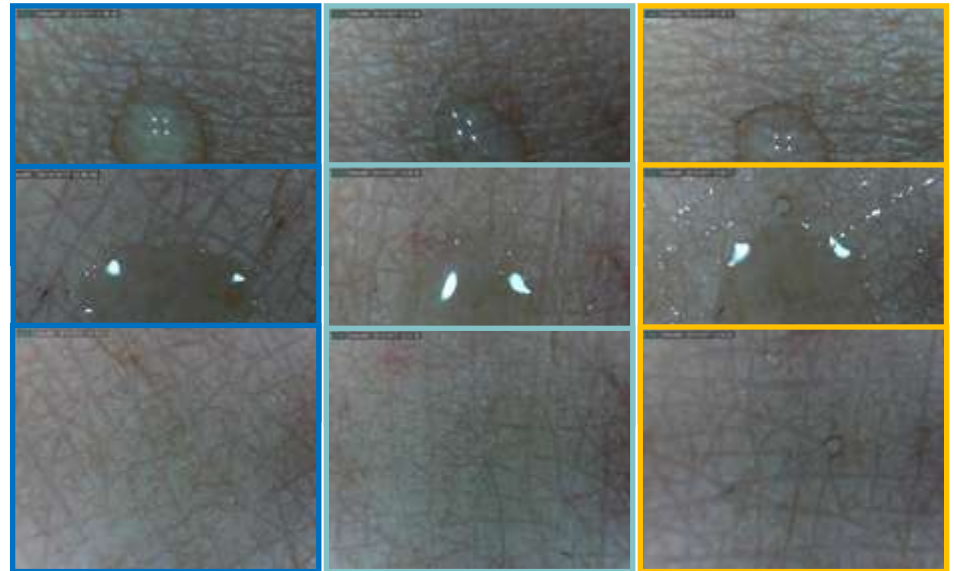
EM•X GOLD



Water

Ultrapure water

EM•X GOLD



	Water	Ultra pure Water	EM•X GOLD
Average Time	15:45	15:56	12:33

Conclusion: EM•X GOLD has the highest permeability.

4. Safety of the Product

All of the materials used in EM-X Gold are selected carefully to ensure their safety and high quality.



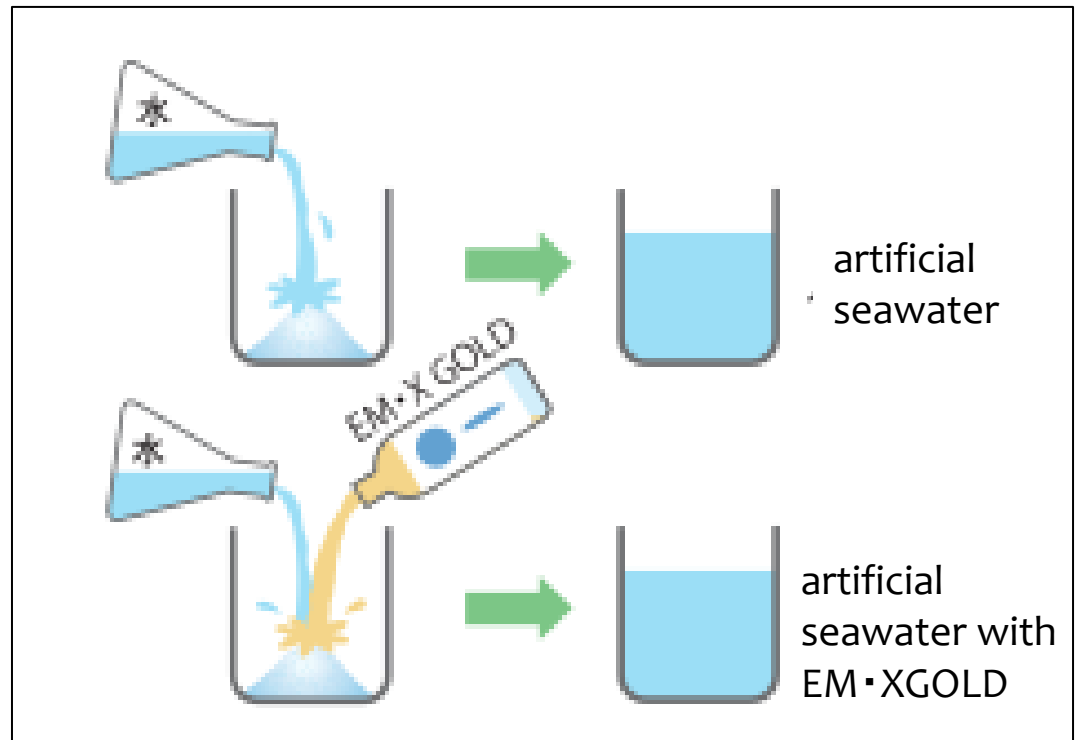
We implemented the strictest Quality Management System and Food Safety Standards attainable in the world: **FSSC22000** (the ISO22000 and PAS220 based certification scheme) and EM-X GOLD is in production under this quality control.



Safety Test

Sea urchins are highly sensitive to environmental stress and won't survive if exposed to stresses.

We grew Sea Urchins in artificial seawater and one with EM•X GOLD added.



Conclusion of Safety Study

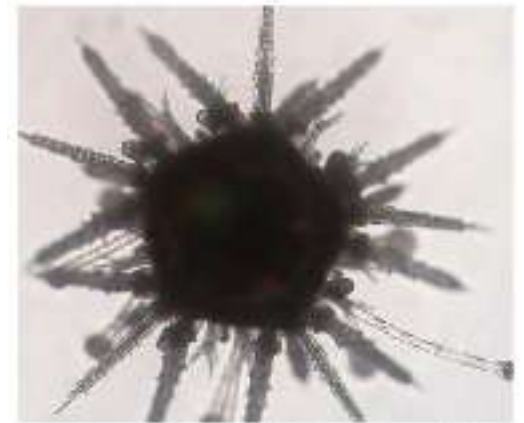
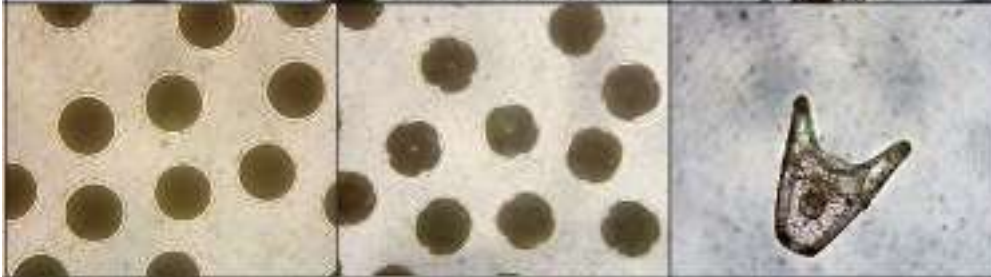
**Sea urchins grew in artificial sea water with EM•X GOLD added.
This proved that EM•X GOLD is a safe drink.**

Fertilization Segmentation Pluteus larva

Artificial
Sea Water



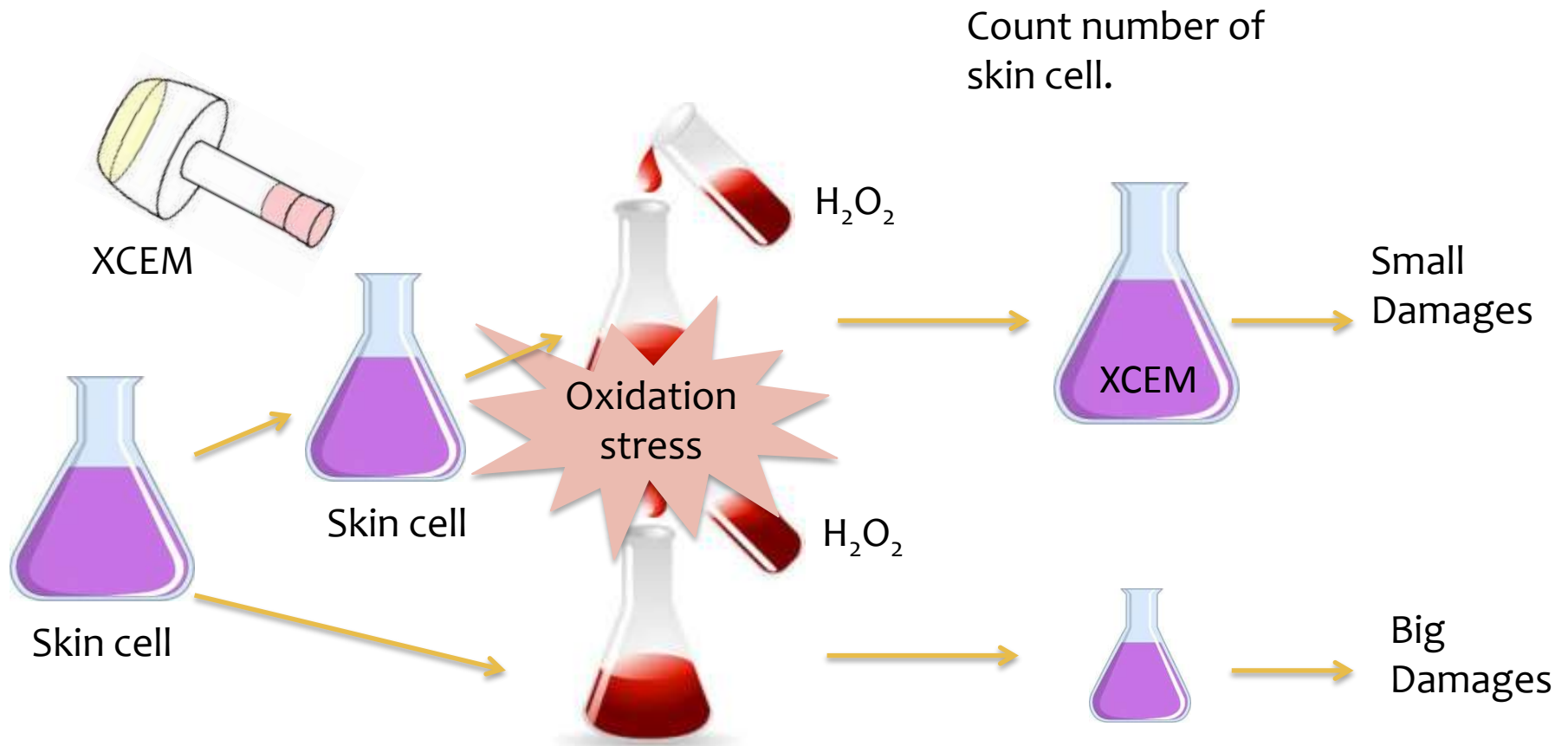
Artificial Sea
Water with
EM•XGOLD



Sea Urchin can survive in
artificial seawater with
EM•X GOLD

Experiment 1

The effect of XCEM on anti-oxidation ability of human skin cell



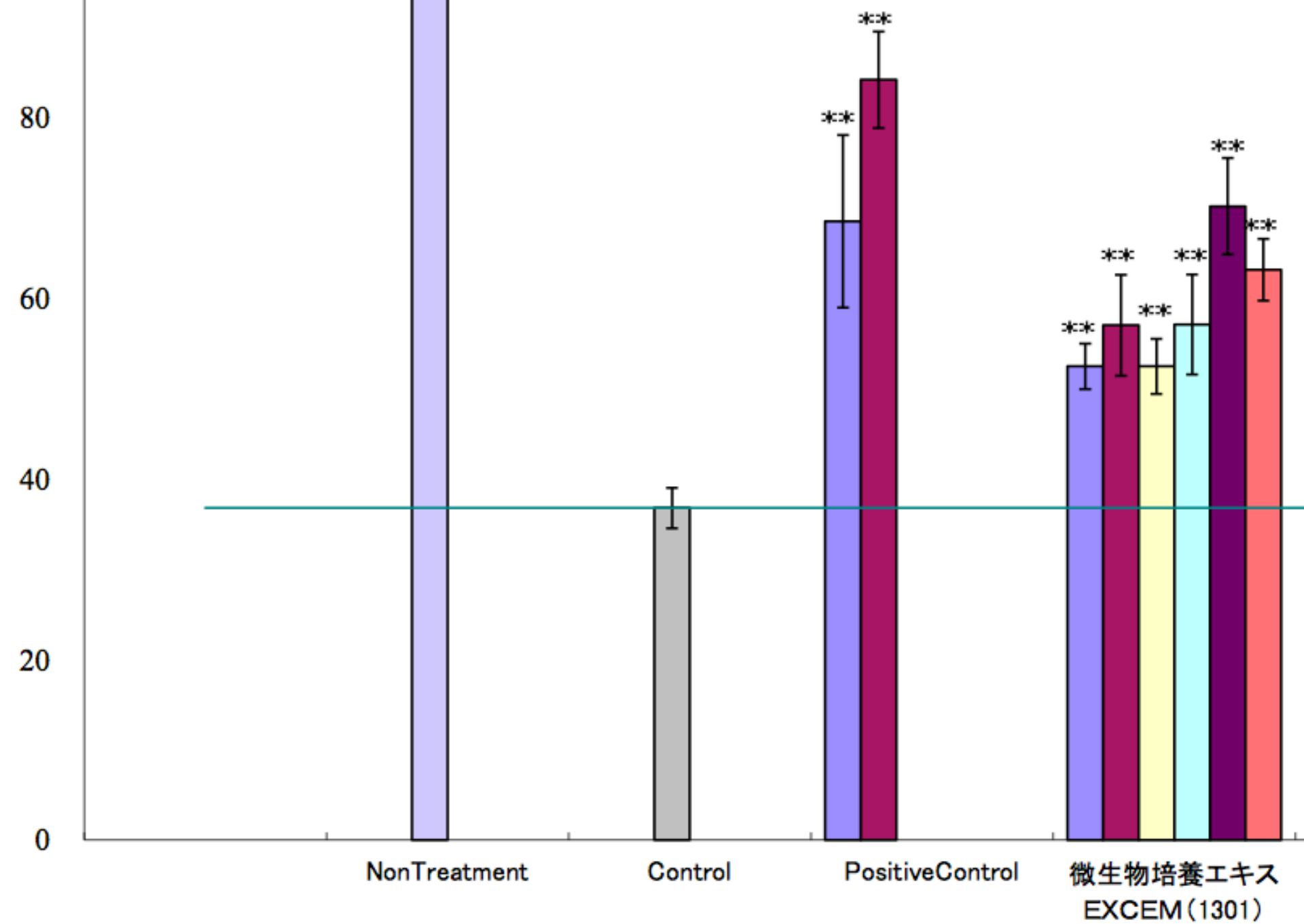


図1 細胞生存率 Non Treatment比

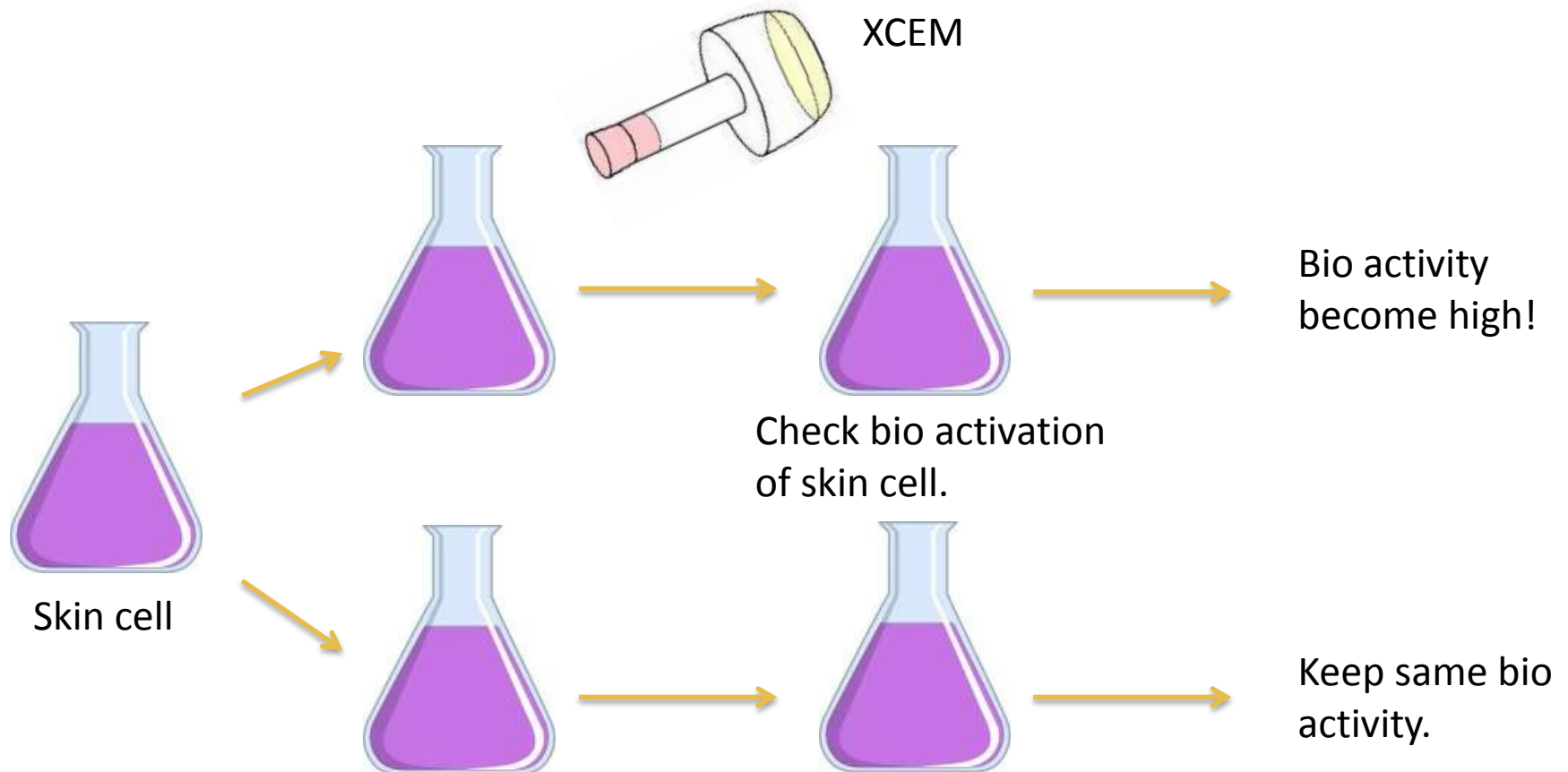
Conclusion 1

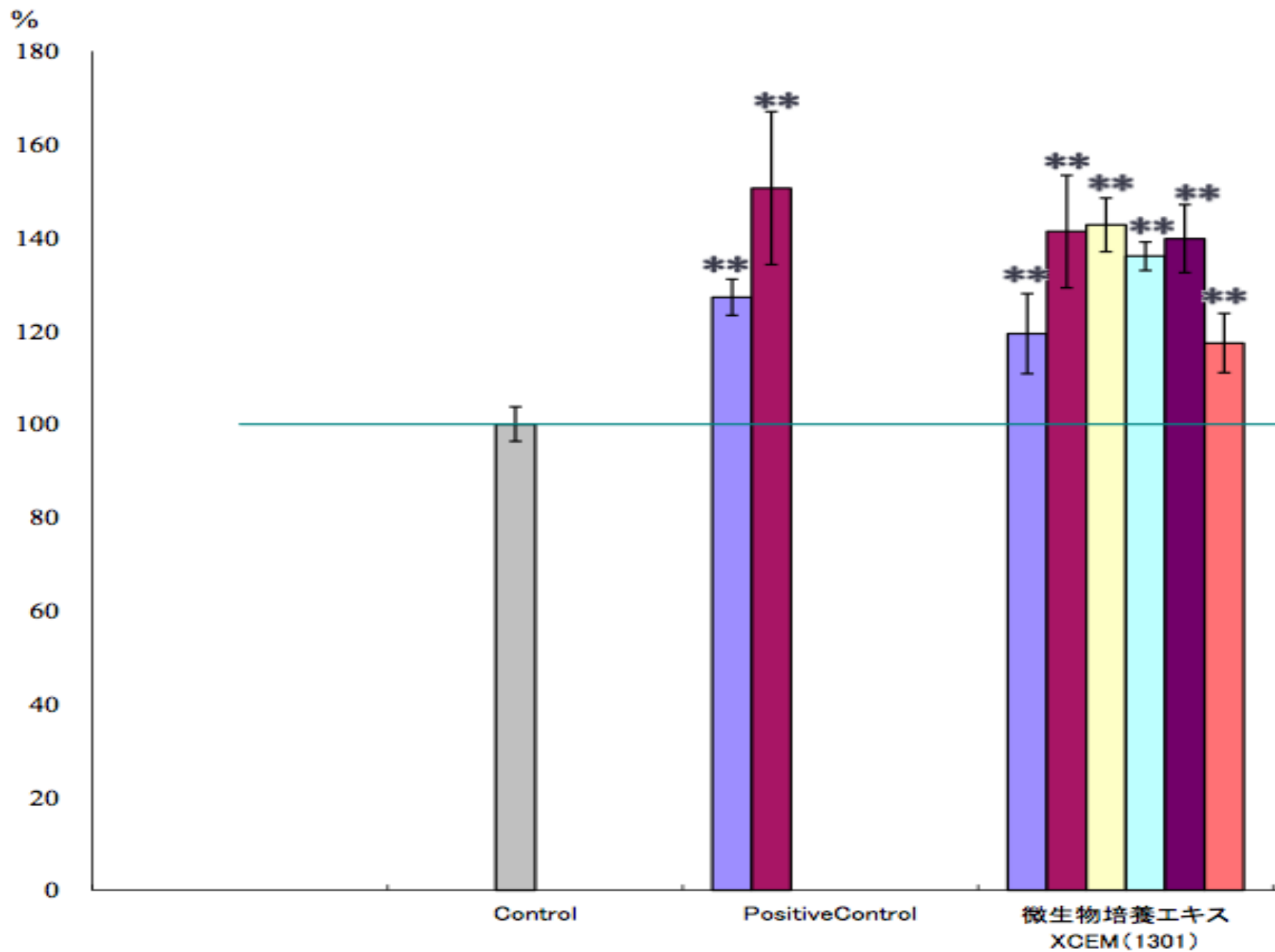
XCEM can enhance antioxidation ability of human skin cell.

It can be also said that EM-X GOLD, which contains XCEM, can enhance antioxidation ability of human skin cell.

Experiment 2

The effect of XCEM on bio activation of human skin cells





Mean ± SD

図1 細胞賦活性評価

Conclusion 2

XCEM can enhance bio activation ability of human skin cell. It means XCEM can activate metabolic system of skin cell.

Therefore, EM-X GOLD, which contains XCEM, can be considered to enhance bio activation of skin cells and support skin metabolic system.

Experiment 3

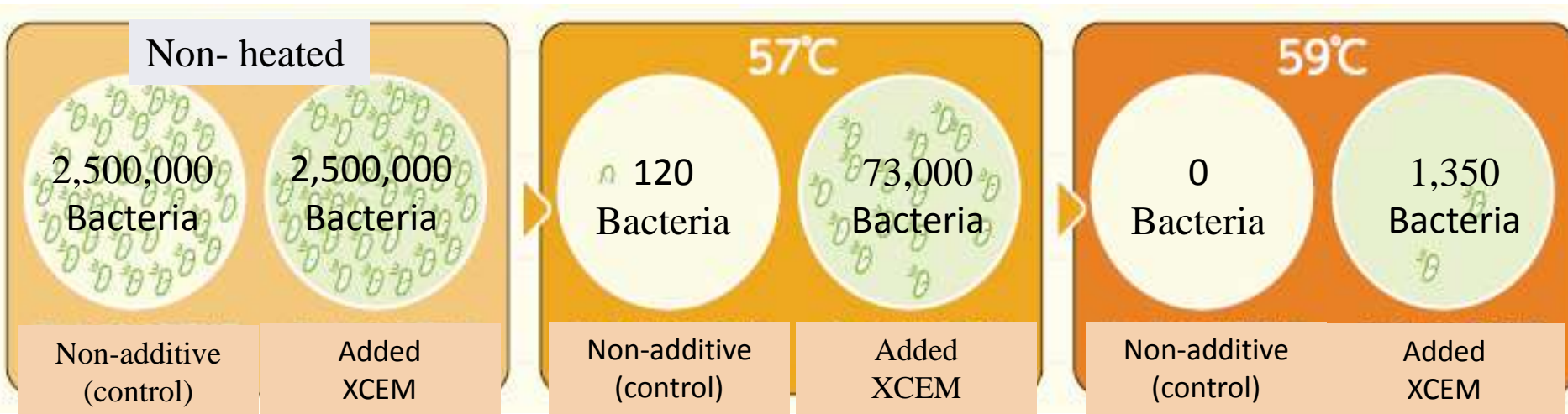
The effect of XCEM on heat resistance of lactobacillus

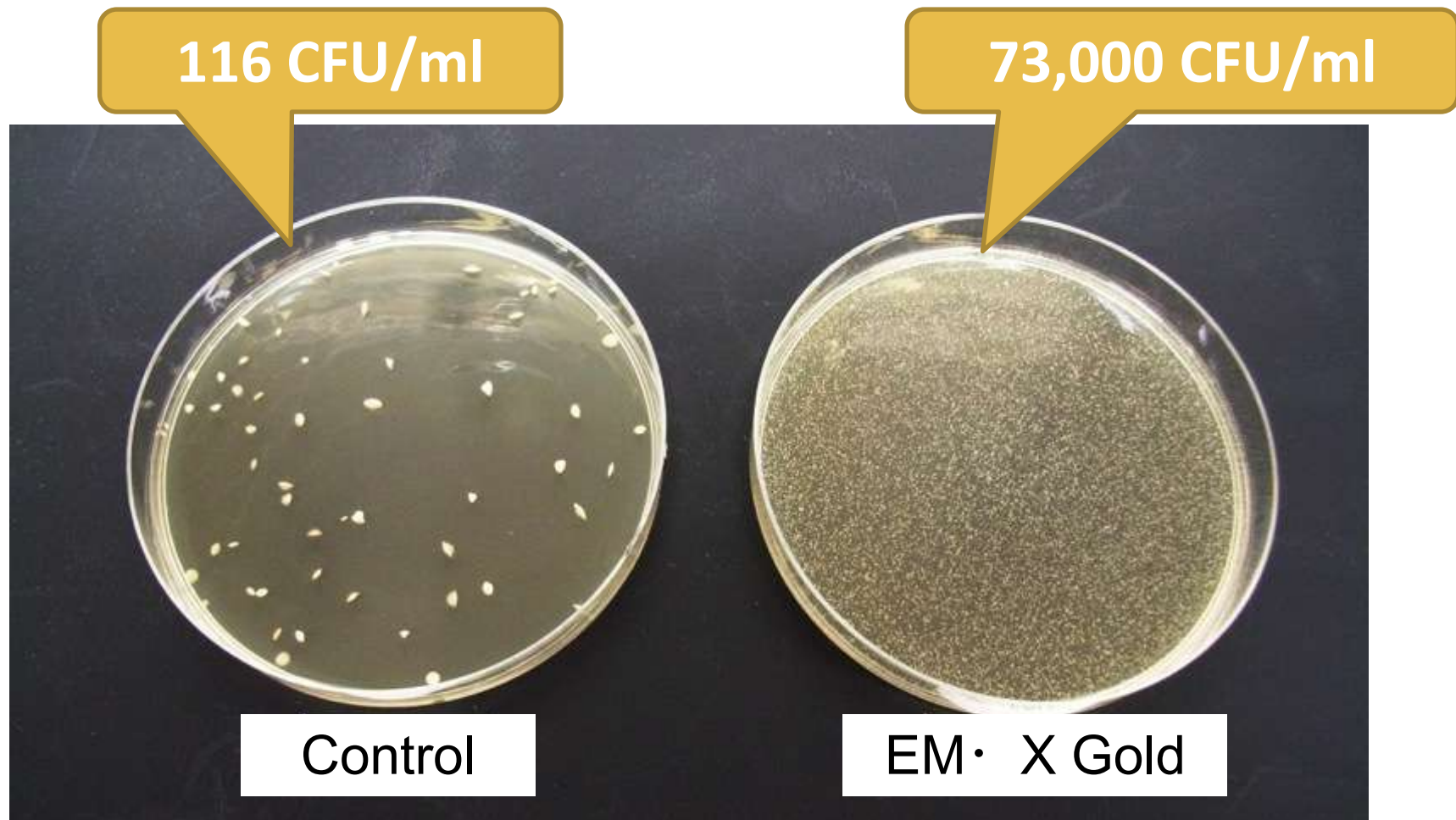
Experiment

Added XCEM into lactobacillus and applied heat

Result

Survival rate of lactobacillus increased by adding XCEM





The culture plate of Lactobacillus after heating at 57°C

Conclusion 3

XCEM(EM-X GOLD) can enhance anti heating stress(heat resistance) ability of Lactobacillus.

Experiment 4

The effect of XCEM on natural immunity system of human body

Macrophage, assistant of white blood cells (NK cells), is very important for natural immunity system.

Thus, the research was focused on the effect of XCEM on macrophage.

What is Macrophage?

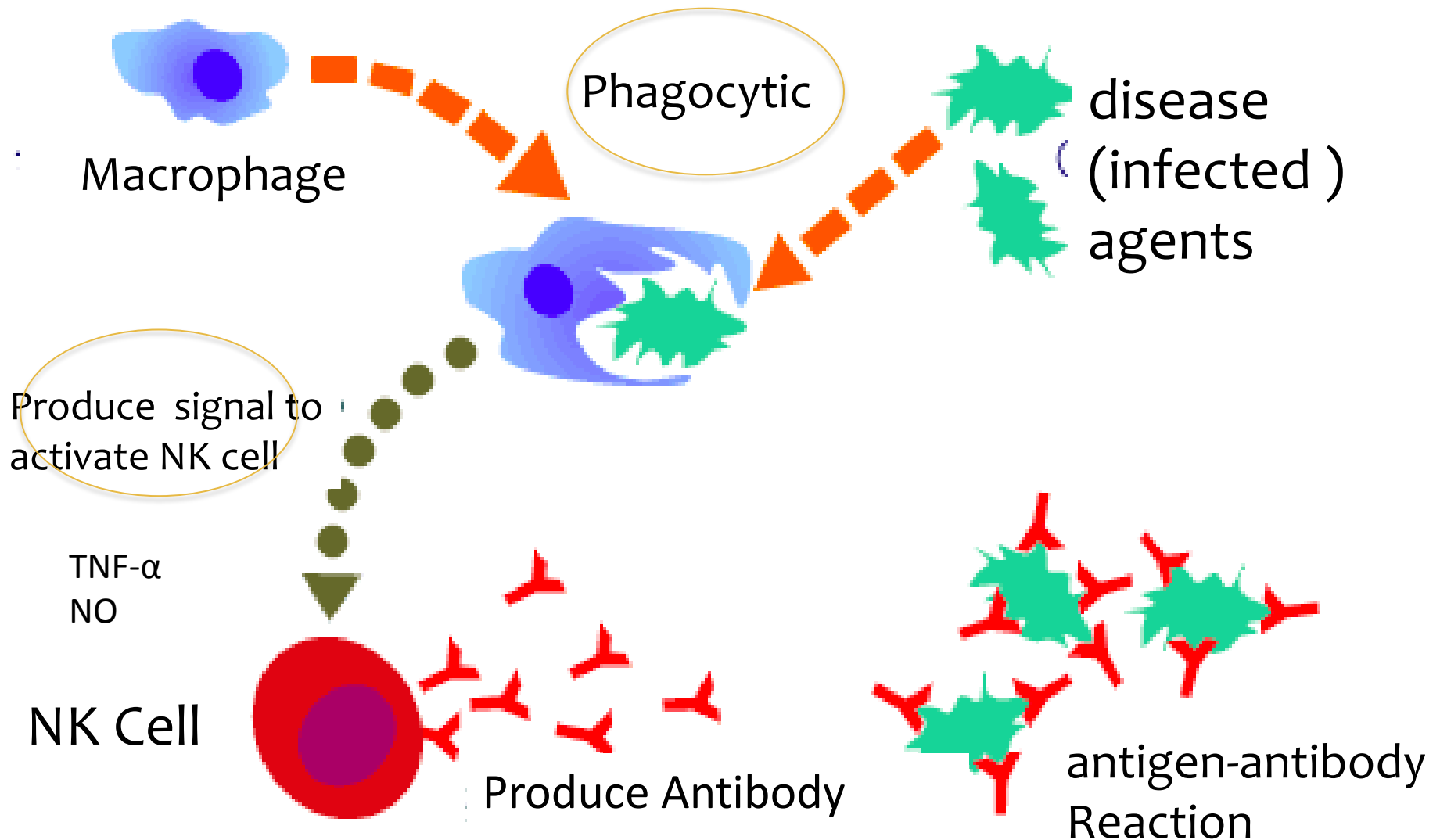


Fig. 1. Effect of XCEM on NO production in macrophage

1) Evaluation of immunostimulating activity

Nitric oxide (NO) production

XCEM at 3% contains 3.3 ng/ml of LPS

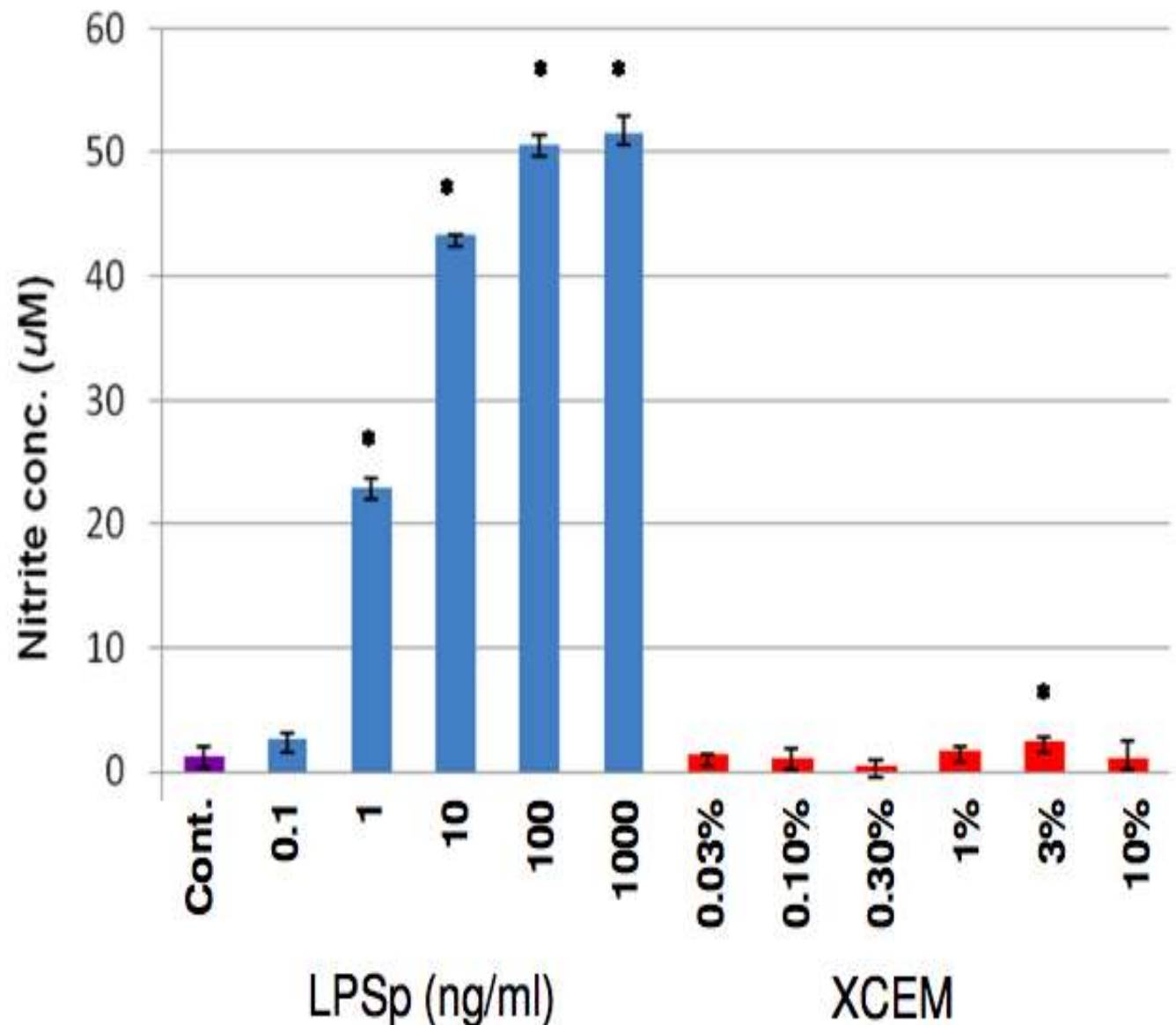


Fig. 2. Effect of XCEM on TNF- α production in macrophage

1) Evaluation of immunostimulating activity

TNF- α production

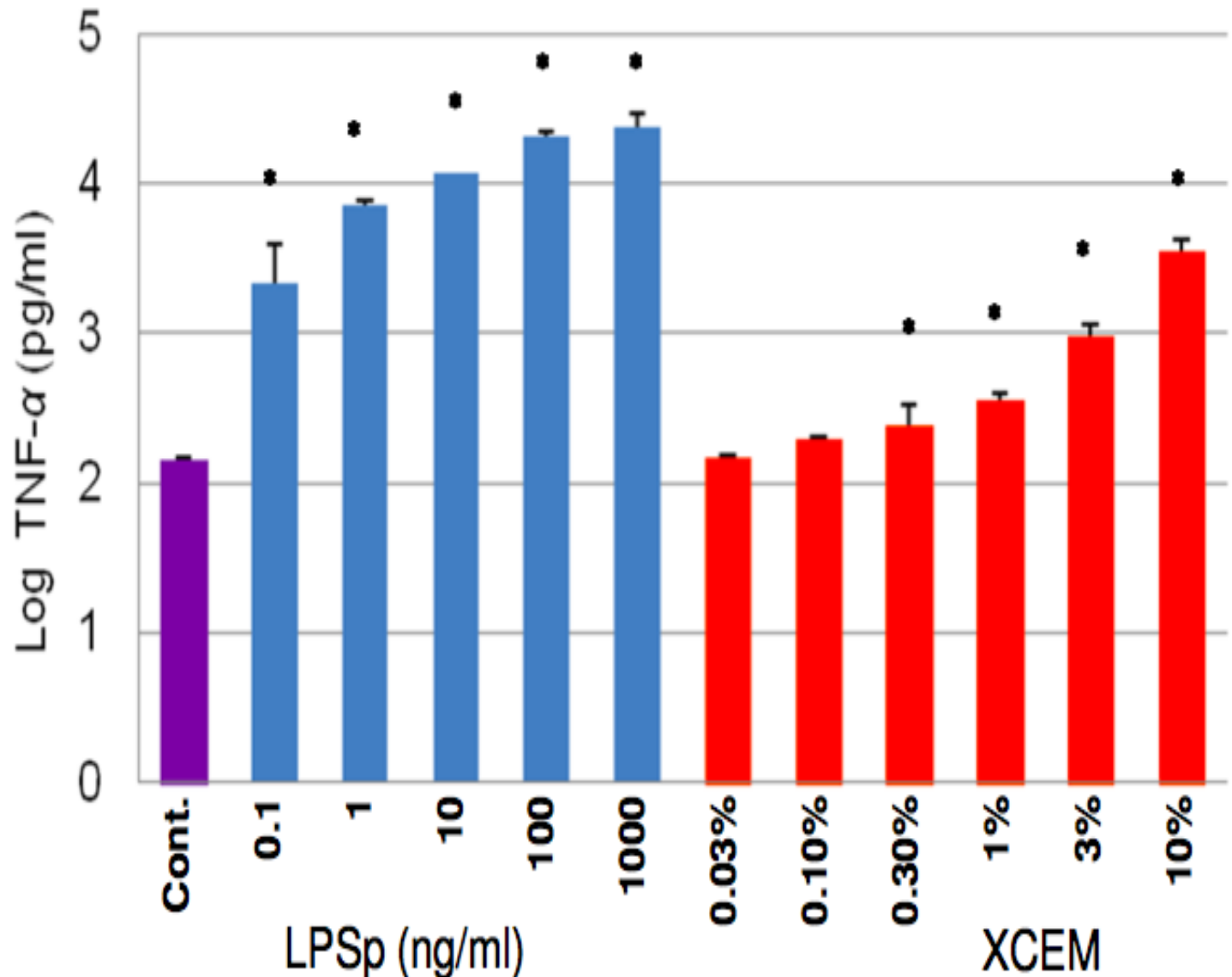
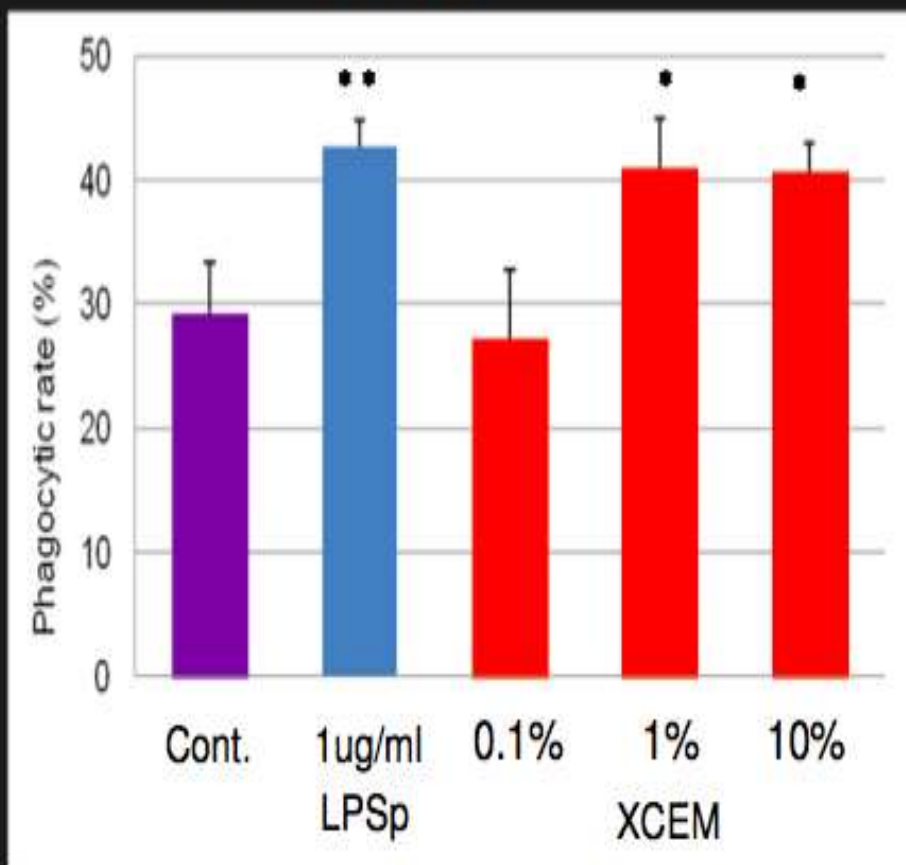
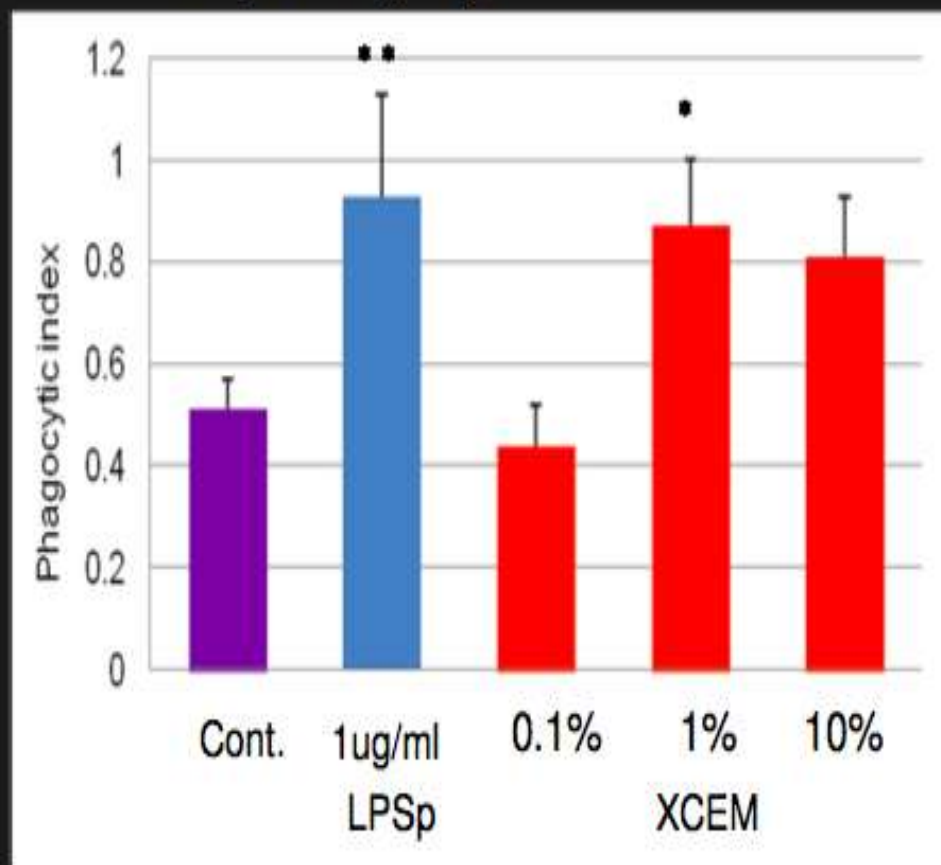


Fig. 3. Effect of XCEM on phagocytic activity of macrophage

A) Phagocytic rate



B) Phagocytic index



1 µg/ml LPS = 1,000 ng/ml LPS. 1% of XCEM contains 1.13 ng/ml of LPS.

Conclusion

XCEM can enhance to produce $\text{TNF-}\alpha$ which is a signal to activate NK cells.

But, XCEM does not support production of NO.

Phagocytic activities of Macrophage were significantly elevated by XCEM.

It means XCEM supports the natural immunity system of Human body.

Stress and Protein

Physical stress

Ultraviolet rays, Heat,
Radiation

Chemical stress

Alcohol, Tobacco,
Heavy metal

Psychological stress

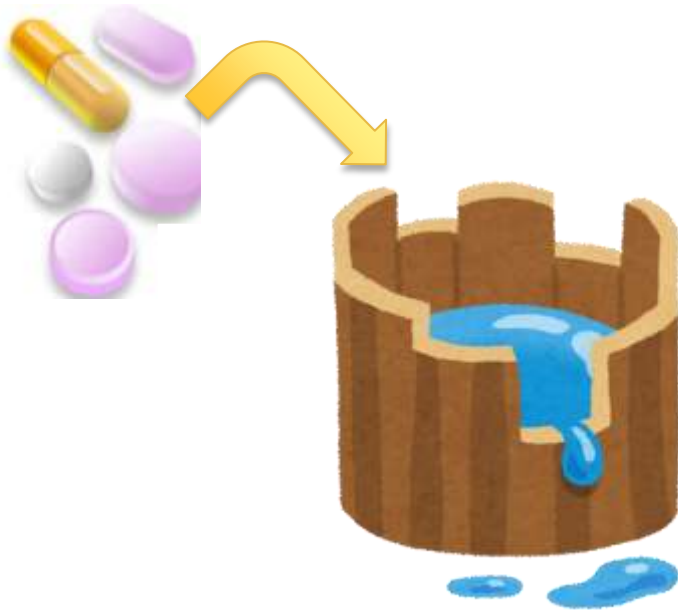


Become ill

Various stresses damage proteins and cells inside our body and because of that, they won't function properly.

Moderating your health balance

XCEM will moderate your health balance in a natural way and thereby enhancing natural healing ability.



unbalanced = get ill
(broken barrel)

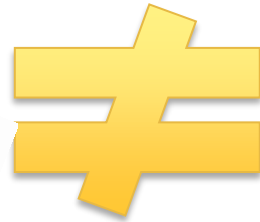


Balanced = stay healthy
(normal barrel)

EM-X GOLD is something like Swiss Army Knife



Specialist
(medicine/supplement)



Generalist

EX-XGOLD has many hands and can approach to maintain our health supplying what is missing.

The image shows a chemical structure of a complex organic molecule, likely a nucleoside or nucleotide derivative. It features a pyrimidine ring system (left) and a sugar moiety (right). The pyrimidine ring has a hydroxyl group at the 2-position and a carbonyl group at the 4-position. The sugar moiety is a five-membered ring with a hydroxyl group at the 2-position and a carbonyl group at the 4-position. The structure is connected to a phosphate group (left) and a nucleobase (right). The nucleobase is a pyrimidine ring with a hydroxyl group at the 2-position and a carbonyl group at the 4-position. The structure is also connected to a sugar moiety (left) and a phosphate group (right). The sugar moiety is a five-membered ring with a hydroxyl group at the 2-position and a carbonyl group at the 4-position. The phosphate group is a four-membered ring with a phosphorus atom and four oxygen atoms. The structure is also connected to a nucleobase (left) and a sugar moiety (right). The nucleobase is a pyrimidine ring with a hydroxyl group at the 2-position and a carbonyl group at the 4-position. The sugar moiety is a five-membered ring with a hydroxyl group at the 2-position and a carbonyl group at the 4-position.

EM-X GOLD® contains various nutrients left behind by microscopic organisms during the fermentation process. We strive to keep it natural by not concentrating or artificially manufacturing one specific component. These nutrients are safe for us and the environment so you

can have a lot of it without the fear of doing harm to yourself. Unlike medicine, it doesn't contain a high amount of one specific ingredient so there's no need for "instructions." You can drink it as your lifestyles see fit.



Suppliment

EM·X GOLD®

Purpose	To yield a certain effect.	To supplement a certain nutrient	To support the body to recover to its original health
Component	One main component in high concentration	Only one kind of nutrient or mineral in large doses.	A variety of nutrients in smaller amounts
Dosage	Must be taken under medical guideline or supervision.	Should not be consumed more than necessary.	No limitation
Side Effect	★★★★★	☆☆☆ (if overdosed)	None
Target	Ones with certain conditions	Ones in need of nutritional support	Anyone with any kinds of health conditions; from babies to the elderly

Thank You

