



# Scientists Find Popular Food May Aid Microplastic Removal

## Description

Researchers in South Korea have discovered that a bacterium from kimchi, a traditional fermented dish, could help remove nanoplastics from the human body. The study, carried out by the World Institute of Kimchi, found that this microbe can attach to nanoplastics in the gut, potentially aiding in their elimination.

Nanoplastics are tiny particles less than 1 micrometer in size, formed as larger plastics break down. They, along with microplastics, are commonly found in food and water, prompting concerns about health impacts as they might accumulate in organs like the brain and kidneys.

The team, led by Drs. Se Hee Lee and Tae Woong Whon, studied a specific lactic acid bacterium from kimchi, called *Leuconostoc mesenteroides* CBA3656, which binds to polystyrene nanoplastics in experiments. This bacterium managed to retain a high binding rate under conditions similar to the human intestine, unlike a reference strain.

Experiments with mice showed promising results; those given the kimchi-derived bacteria excreted more nanoplastics compared to those that did not receive probiotics, suggesting the probiotic's potential effectiveness.

The findings indicate that kimchi's lactic acid bacteria could interact with environmental toxins and offer a new method to tackle nanoplastic pollution within the body. Dr. Lee highlighted the potential of using microorganisms from fermented foods to address this challenge and expressed plans to continue exploring kimchi's scientific value for health and environmental solutions.

## Comprehension Questions

### Multiple Choice

1. What is the main purpose of the research conducted in South Korea?

Option: To study the nutritional value of kimchi

Option: To discover a way to remove nanoplastics from the human body

Option: To analyze the taste of fermented foods

Option: To develop new plastic materials

2. Which bacterium from kimchi was studied for its ability to bind to nanoplastics?

Option: *Lactobacillus plantarum*



Option: Leuconostoc mesenteroides CBA3656

Option: Bifidobacterium longum

Option: Streptococcus thermophilus

3. What size are nanoplastics typically?

Option: Less than 5 micrometers

Option: Less than 10 nanometers

Option: Less than 1 micrometer

Option: Less than 1 centimeter

4. What was the outcome for mice given kimchi-derived bacteria?

Option: They gained weight

Option: They excreted more nanoplastics

Option: They developed a resistance to nanoplastics

Option: They showed no significant change

5. What environmental issue are the findings of the study addressing?

Option: Global warming

Option: Nanoplastic pollution

Option: Air pollution

Option: Food scarcity

6. Who led the research team at the World Institute of Kimchi?

Option: Dr. Se Hee Lee and Dr. Tae Woong Whon

Option: Dr. Kim Ji Soo

Option: Dr. Lee Sun Min

Option: Dr. Park Joon

### True-False

7. The study found that kimchi can help remove microplastics from the human body.

8. Dr. Lee plans to explore the scientific value of kimchi for health solutions.

9. Nanoplastics can accumulate in organs such as the brain and kidneys.

10. Lactic acid bacteria from kimchi have no potential in addressing environmental toxins.



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11. The bacterium studied was unable to bind to polystyrene nanoplastics.
  12. The research indicates that probiotics may aid in the elimination of nanoplastics.

### Gap-Fill

13. The bacterium studied is called *Leuconostoc mesenteroides* CBA3656 and it can bind to \_\_\_\_\_.
14. Nanoplastics are formed as larger plastics break down and are less than \_\_\_\_\_ in size.
15. Experiments showed that mice given kimchi-derived bacteria excreted more nanoplastics than those that did not receive \_\_\_\_\_.
16. The study was carried out by the World Institute of \_\_\_\_\_.
17. The findings of the study suggest a new method for tackling \_\_\_\_\_ pollution within the body.
18. Dr. Lee highlighted the potential of using microorganisms from fermented foods to address \_\_\_\_\_ challenges.

### Answer

**Multiple Choice:** 1. To discover a way to remove nanoplastics from the human body 2. *Leuconostoc mesenteroides* CBA3656 3. Less than 1 micrometer 4. They excreted more nanoplastics 5. Nanoplastic pollution 6. Dr. Se Hee Lee and Dr. Tae Woong Whon

**True-False:** 7. False 8. True 9. True 10. False 11. False 12. True

**Gap-Fill:** 13. polystyrene nanoplastics 14. 1 micrometer 15. probiotics 16. Kimchi 17. nanoplastic 18. environmental

### CATEGORY

1. Health - LEVEL4

### POST TAG



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**Date Created**

2026/04/02

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