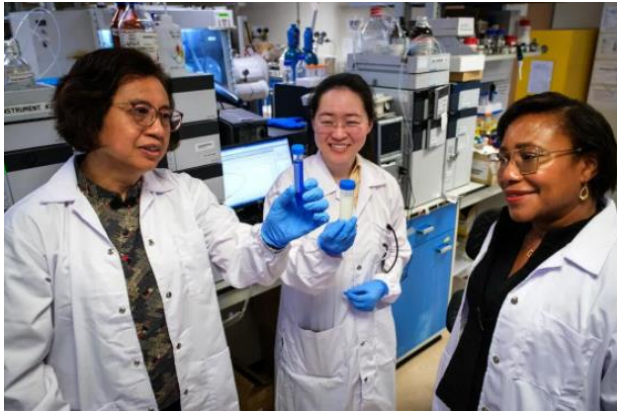




## Red Hot Singapore

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### Singapore researchers develop antibiotics alternative for cow udder infection

SINGAPORE – New antimicrobial compounds developed in Singapore could help treat a bacterial infection of cow udders that significantly reduces milk output and causes global losses to the tune of billions each year.

The compounds could act as an alternative to antibiotic usage, which has raised concerns about rising antibiotic resistance and milk contamination from antibiotic residues.

This breakthrough was developed by an antimicrobial resistance (AMR) interdisciplinary research group comprising researchers from Nanyang Technological University (NTU) and the Singapore-MIT Alliance for Research and Technology (Smart). Smart is the Massachusetts Institute of Technology's (MIT) research enterprise in Singapore.

Bovine mastitis is an inflammation of the mammary gland in cows, caused by microbes entering the teat via the teat canal.

This typically occurs because the cow's teat canal is open for about 30 minutes to 45 minutes after milking, which leaves it susceptible to infection, said Dr Zhang Kaixi, a research scientist with Smart's AMR research group.

To prevent infection, cow's udders are typically dipped in an antiseptic solution, such as those containing iodine or chlorhexidine, she added.

However, the long-term use of these solutions can irritate udders or cause their skin to crack, which increases the risk of infection, she said.

Antibiotics are usually used to treat cow's udders when they are infected. However, this results in high concentrations of antibiotics in the milk during the treatment period, which can last up to 11 days.

Such milk cannot be consumed or sold under current regulations, Dr Zhang noted, adding that bacteria resistant to such antibiotic treatments have surfaced.

There are also concerns that after cleaning the udders of the antiseptics, iodine and chlorhexidine may find their way into the environment, which could result in issues such as causing harm to aquatic life.

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