Crucial new antibiotics could be hiding up your nostrils

By **Henry Bodkin**

A NEW class of antibiotics has been discovered that could be used to fight superbugs such as MRSA, and it was under our noses the whole time.

Scientists were amazed to discover that a bacterium which lives in the human nostril produces an antibiotic that they believe can form the basis of new therapies for hard-to-treat infections.

There is an urgent need for fresh antibiotics to tackle the rise of drug-resistant superbugs, known as antimicrobial resistance, which experts have warned could see 10 million unnecessary deaths a year by 2050.

Most antibiotics have previously been found in soil-living bacteria, but identifying novel compound structures from these sources has become increasingly difficult, and no new classes have been identified for decades.

Biologists at Tubingen University in Germany examined nasal swabs from 187 hospital patients and found that 30 per cent of them were hosting the bacterium *S. aureus*, which produces the antibiotic Lugdunin.

Writing in the journal *Nature*, the scientists describe how Lugdunin has potent antimicrobial activity against a wide range of dangerous bacteria, including MRSA. The compound is the first known example of a new class of peptide antibiotics and was used by the researchers to treat infections in mice.

Dr Andreas Peschel, one of the study's authors, said that the last place they expected to find a new antibiotic was in the nose, but that the relatively unfriendly environment may explain why *S. aureus* could be so useful.

"If I was a bacteria I wouldn't go to the nose," he said. "There's nothing – it's simply salty liquid and a tiny amount of nutrients.

"It's an interesting and unexpected finding that maybe the poorer the environment, the better chances of finding antibiotics," he said, adding the study may yield "new therapeutic concepts".

In May a government-commissioned report by Lord Jim O'Neill called for billion dollar rewards for pharmaceutical firms developing new antibiotics.

The economist said overuse of current antibiotics was allowing deadly bacteria such as *E. coli* and Salmonella to mutate into drug-resistant strains.