Hundreds of thousands of deaths occur globally every year because new bacteria are becoming resistant to antibiotics. The World Health Organisation has warned that this resistance to traditional drugs is spreading across the world and now even common infections that used to be easily treatable can kill.

But scientists from the University of East Anglia, collaborating with colleagues at other universities in the UK and China, last year published a breakthrough in understanding the "Achilles heel" of these new superbugs. Funded by the Wellcome Trust, the researchers looked at how bacteria create defensive membranes by transporting the building blocks of this wall to their surface. Crucially, if this path is blocked, the bacteria become vulnerable and die.

"The exciting thing about this is that new drugs will specifically target the protective barrier around the bacteria, rather than the bacteria [themselves]," said Haohao Dong, the paper's lead author. "Because new drugs won't need to enter the bacteria, we hope that the bacteria will not be able to develop drug resistance in future."

Earlier this year the Wellcome Trust awarded a further £1.7 million to group leader Changjiang Dong to continue the work. The findings, published in the journal Nature, generated huge press coverage both in the UK and internationally.

The judges said it had "the potential to make an enormous contribution in the field of antibiotic resistance and will make a huge difference to global health".