Tackling ‘SUPERBUGS’

Understanding the enemy

**MRSA** (Methicillin-resistant *Staphylococcus aureus*)
- A multidrug-resistant pathogen that causes serious infections and is difficult to treat.

**Clostridium difficile**
- Responsible for a growing number of hospital-acquired infections.
- **Research at the University of Cambridge** has shown that molecular pumps in the membrane of bacteria might be reversed so that bacteria accumulate antibiotics instead of exporting them.
- This could lead to new therapeutic targets.

Towards new treatments

**Research is offering several ways of managing the problem of drug-resistant bacteria:**

1. **Revitalising conventional antibiotics** so that they can overcome resistant bacteria and become effective again.
2. **Inhibiting multiple drug transporters** that enable bacteria to pump out antibiotics.
3. **Identifying new targets in bacteria with novel antibiotics and treatments**.
4. **Developing protective vaccines**.

**EU consortium for antibiotic research**
- An EU-funded partnership of seven research teams involving scientists from universities, hospitals, pharmaceutical companies and small biotechnology companies, including one from the John Innes Centre, has identified and converted antibiotics to produce new classes of medicines.
- A potential route to combating MRSA has been proposed recently by researchers at the University of St Andrews.

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