

Antibiotic resistance: Take action now before it's too late

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One of the biggest global challenges of the 21st century has brought members of the international research community together to assess the next steps for research.

Antimicrobial resistance (AMR), the ability of human pathogenic

bacteria to resist the action of antibiotics, is the subject of a special issue of the *Journal of Molecular Biology*.

The edition is published today and brings together an editorial overview plus 11 articles from world-leading researchers under the theme: The Molecular Basis of Antibiotic Action and Resistance.

The special issue assesses the progress made by research to identify the molecular mechanisms which could lead to the development of new [antibiotics](#). The 2017 O'Neill Report warned that AMR could result in 10 million deaths a year due to untreatable infections by 2050.

Researchers from the John Innes Centre have contributed to two of the articles and to the editorial overview.

Professor Tony Maxwell, Group Leader at the John Innes Centre, and one of the editors of the *Journal of Molecular Biology* explains the motivation behind the Special Issue: "This group of articles highlights what frontline researchers are trying to do about one of the biggest problems facing mankind in the 21st century."

The journal reflects great hopes of new research in identifying useful compounds from plant natural products of diverse origins and synthetic chemistry. For [scientific advances](#) to take hold they need to be matched by innovations in medical, economic and political approaches, the journal concludes.

Professor Maxwell says: "The big pharmaceutical companies can contribute but are not going to solve this crisis because there are not enough profits from antibiotic research and development. I believe all expertise we need is available in the academic sector working with small and medium-sized enterprises."

"An idea would be a publicly funded model which brings together all the appropriate skills: chemists, medicinal chemists, natural product chemists, pharmacologists, clinicians and so forth."

"It sounds like a challenge but if we don't start to do something, epidemics of bacterial disease will be lapping at our shores before too long. People know about the [bubonic plague](#), and it's not overstating the case to say that something like that could happen again if we don't take action soon."

The Molecular Basis of Antibiotic Action and Resistance appears in the *Journal of Molecular Biology*.

More information: Antimicrobial resistance (AMR), the ability of human pathogenic bacteria to resist the action of antibiotics, is the subject of a special issue of the *Journal of Molecular Biology*:
www.sciencedirect.com/journal/...ogy/vol/431/issue/18

Provided by John Innes Centre

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