Press release 26 June 2019

Game of Microbes Winter is Coming!

Scientists from APC Microbiome Ireland in UCC are calling for action against the global threat of antibiotic resistance on World Microbiome Day (June 27).

Antibiotics have been the weapon of choice for treating bacterial infections for the last 80 years. Combined, antibiotics have saved an estimated 200 million lives since their discovery. However, in the never-ending battle of Game of Microbes, we have over-relied on antibiotic medicines and now we are paying the price.

In Game of Thrones, each time the armies of the Seven Kingdoms meet on the battlefield they reveal their weapons to their opponent. Even if your army is victorious, your enemy leaves the battlefield with new knowledge of your weaponry. Your enemy can then adapt their defensive strategy to become stronger against you next time. The same is true of bacterial infections; each time bacteria are exposed to antibiotics they adapt and over time become resistant. They are no longer effective at treating infections that they were designed to treat. Antibiotic Resistance is one of the most serious threats to humanity right now. Winter is Coming in the form of Antibiotic Resistance!

Today marks World Microbiome Day and this years’ theme is Bacterial Resistance to Antibiotics. Initiated last year by APC Microbiome Ireland, a world leading SFI Research Centre, World Microbiome Day showcases the diverse worlds of microbiomes and encourages public dialogue on the crucial importance of microbiomes to human, animal and environmental health. The microbiome is the community of micro-organisms (including bacteria, viruses and fungi) that live in our gut and on our skin. Like the colourful characters of Game of Thrones, some of these micro-organisms are good, some are bad, and all of them are involved in an on-going battle for the upper hand.

As committed as the Guards of the Night’s Watch, scientists, researchers, health professionals and policy makers are desperately trying to protect the ancient Wall that is our microbiome. But the incessant growth of resistant bacteria, called Superbugs, is reminiscent of the return of the White Walkers, breaking through the Wall in to the Seven Kingdoms.

If we want to win the war, we must change our battle plan. The development of new antibiotics is not keeping pace with the rate at which bacteria are becoming resistant. Is there a Dragonglass weapon against bacterial infections on the horizon? Research at APC Microbiome Ireland is investigating phage (virus-based) and other targeted antimicrobial treatments as alternatives to antibiotics.

The message from the World Health Organisation is clear, we need to be more prudent with our use of antibiotics. Antibiotics should only ever be used to treat bacterial infections when prescribed by a doctor and the course of antibiotics should always be completed. The spread of infections can be minimised by regular handwashing, hygienic preparation of food and by keeping up to date with vaccinations.

Antibiotic resistance is a truly global challenge that can only be addressed by co-ordinated and sustained action on an international scale. Imagine if the Seven Kingdoms united to fight off the White Walkers; on World Microbiome Day we are calling for united action against the threat of antibiotic resistance.

For further information on World Microbiome Day see www.worldmicrobiomeday.com and on social media @wmicrobiomeday (twitter) #WorldMicrobiomeDay
About APC Microbiome Ireland

APC Microbiome Ireland (APC; http://apc.ucc.ie) is a world-leading SFI Research Centre based in University College Cork which was formed in 2003 with funding from Science Foundation Ireland and in conjunction with key industry partners. It represents a seamless collaboration between University College Cork and Teagasc (the Irish Agriculture and Food Development Authority). It is widely recognised that the gut microbiota plays an important role in human health and has become one of the most dynamic, complex and exciting areas of research in both food and pharmaceutical arenas. Over the last decade the APC has established itself as one of the leading global centres in gut microbiota research. The APC has made several landmark discoveries and has published over 2,500 research articles in peer-reviewed journals, generating many journal covers and associated editorials. Recent research areas being led by APC include the development of new diagnostics or biomarkers of health or risk of disease (e.g. colon cancer) based on analysis of the microbiota; exploring the mechanisms by which the microbiota may be favourably mobilised or manipulated (e.g. by bacteriophage) to promote health and ‘mining’ the microbiota for new drugs (e.g. smart antibiotics) and functional food ingredients. APC recently celebrated 15 years in operation, with the publication of a new report “Mining Microbes for Mankind - 15 years of Impact”, produced in tandem with Cork University Business School, which outlines the impact of APC research on society and on the Irish economy. The Executive Summary of the report “Mining Microbes for Mankind – 15 years of impact” is available to download at http://apc.ucc.ie/apc-15-years-impact/