

Introduction on the bacterial viruses course

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Hi everyone, thank you for joining this online course on bacterial viruses or bacteriophages. We hope this course can serve as an extension to the introductory chapters in our interactive guide, available on our website www.innovirology.com

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This course is subdivided in three main section and consists of 24 short web lectures, each between about 4 and 8 minutes.

The first section deals with the basic microbiology of bacteriophages, ranging from phage isolation and the infection process, to the molecular diversity of phages and their impact on the environment.

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A second part explores the applications of phages as compounds to combat bacterial infections. First we discuss the impact of phage on the human gut and in industrial settings. Next we go into the various aspects involved in implementing phage therapy as a treatment of infections, both for medical and food and agriculture applications. A final part focuses on how different molecular mechanisms can be used to develop new antibacterials, inspired by phage.

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The third part of this course deals with the immense biotechnological applications that can be derived from phage. You will learn how phages are applied to specifically identify bacteria and the emerging trends in this field. Since the CRISPR/Cas system is related to phage, we discuss how this bacterial immune system works and how it can be used as a genome editing tool. Phage display is yet another biotechnological application of phages. Its principle and uses are also outlined.

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All in all, we hope that this course provides you with some new insights into the field of phage biology and its applications. I want to really thank the gifted PhD students and postdocs in my lab and that of my local collaborators within KULeuven and Ghent University. It's their voices and work which you will hear in these webinars.

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As for the translations, I'm happy that several research collaborators in Spain, Poland and the south of Belgium have stepped up to help translate the narrative for this course.

Thanks everyone