



### **Molecular Microbiology group. Dept. Genetics and Microbiology. Universitat Autònoma de Barcelona**

Dynamic and multidisciplinary team with a solid and extended scientific trajectory, achieved after more than 35 years of research to unravel and understand the molecular and evolutionary processes that drive virulence and resistance in both bacteria and bacteriophages, with the aim of generating novel antibacterial strategies in applications ranging from clinical to food production. Moreover, the group is involved in many outreach activities focused on the dissemination of Microbiology to the educational system and to society and in the transfer of knowledge to industry.

➤ **Group Members.** Dr. Jordi Barbé (Coordinator); Dr. Susana Campoy (coordinator), Dr. Montserrat Llagostera; Dr. Jesús Aranda; Dr. M. Pilar Cortés; Dr. Ivan Erill (UBMC); Dr. Jennifer Otero; Elisabeth Frutos; Júlia López; Marc Gaona; Gabriela Ortiz; Joan Ruiz; Susana Escribano.

➤ **Research topics**

i) Identification of bacterial targets for antimicrobial therapies; ii) Bacteriophage therapy; iii) Evolution of SOS DNA repair and resistance to antibiotics.

➤ **Selected recent articles**

Sánchez-Osuna M, et al. 2021. Non-canonical LexA proteins regulate the SOS response in the Bacteroidetes. *NAR (in press)*.

Corral J, et al. 2021. Importance of twitching and surface-associated motility in the virulence of *Acinetobacter baumannii*. *Virulence*. 12(1):2201-2213.

Frutos Grilo E, et al. 2020. The Interaction of RecA with both CheA and CheW is required for chemotaxis. *Front Microbiol*. 11: 583.

Otero J, et al. 2019. Biodistribution of liposome-encapsulated bacteriophages and their transcytosis during oral phage therapy. *Front Microbiol*. 10: 689.

Pérez-Varela M, et al. 2019. Roles of efflux pumps from different superfamilies in the surface-associated motility and virulence of *Acinetobacter baumannii* ATCC 17978. 2019. *Antimicrob Agents Chemother.* 63(3). pii: e02190-18.

Colom J, et al 2017. Microencapsulation with alginate/CaCO<sub>3</sub>: A strategy for improved phage therapy. *Sci Reports.* 25;7:41441.

Bardina C, et al. 2016. Genomics of three new bacteriophages useful in the biocontrol of *Salmonella*. *Front Microbiol.* 20;7:545.

Colom J, et al. 2015. Liposome-encapsulated bacteriophages for enhanced oral phage therapy against *Salmonella*. *Appl Environ Microbiol.* 81: 4481-4489.

➤ **Research projects (last 5 years)**

LGT-PHAGE RES. MICINN. PID2020-117708GB-I00. 2021-2024.

Immunotherapy against ESKAPE pathogens. Fundació La Marató de TV3. TV3-201806-10. 2019-2022.

PHAGOVET. EU. H2020-820523. 2018-2022.

Identificación de nuevas dianas asociadas al sistema de motilidad de *Acinetobacter baumannii*. MINECO. BIO2016-77011-R. 2016-2020.

➤ **Doctoral Thesis (Last 5 years)**

Sánchez-Osuna M. Origen y evolución de los genes que confieren resistencia clínica a sulfamidas y a trimetoprim. 16/12/2020. FPU scholarship

Corral J. Implicación de la motilidad en la patogénesis bacteriana. 09/12/2020. FPU scholarship

Otero, J. Encapsulación de bacteriófagos y su aplicación en seguridad alimentaria. 20/11/2019. International PhD Mention.

Pérez-Varela M. Motilidad y virulencia en el patógeno nosocomial *Acinetobacter baumannii*. 25/10/2018.

Irazoki, O. Caracterización de la interacción de las proteínas RecA y CheW de *Salmonella enterica* serovar Typhimurium. 26/06/2017. International PhD Mention.

Colom, J. Studies of the molecular features of three *Salmonella* phages for use in phage therapy and of encapsulation methodologies to improve oral phage administration. 05/02/2016. International PhD Mention.

URL de la página del grupo en su institución: <https://grupsderecerca.uab.cat/micromol/en>.