





FACULTY OF HARMACEUTICAL SCIENCES

The role of quorum sensing peptide PlnA in the gut microbiome-sarcopenia axis

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SARCOPENIA

- Accelerated loss of muscle mass, muscle strength and physical function associated with ageing
- Increased mortality and decreased quality of life
- Underlying pathophysiological mechanisms unclear
- No targeted therapies



More than 10% of the people aged >65y suffer from sarcopenia



GUT MICROBIOTA SARCOPENIA AXIS

The bacterial quorum sensing peptide PlnA plays a pivotal role in sarcopenia.



a. IL-6 dose response curves of PlnA in C2C12 (left) and splenocytes (right). b. *In vivo* mice experiments demonstrating a decrease in grip strength after daily injection of PlnA. c. PlnA detection, using UPLC-MS/MS, in human plasma and *L. plantarum* supernatant.

FUTURE PERSPECTIVES

Our study will provide new insights into a causal association between gut microbiota, i.e. the quorum sensing peptides, and sarcopenia leading to:

- New diagnostic possibilities
- New therapeutic dimensions