早稲田大学スポーツ科学学術院スポーツ科学研究センター　主催

# 第217回スポーツサイエンス研究会

日時　2022年10月20日（木）　14:45 より

場所　早稲田大学 所沢キャンパス 100号館　第一会議室

## 演題　Mouse models of ageing research

## 演者

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## Abstract

To understand the basic determinants of ageing and for the development of effective anti-ageing strategies there is an imperative need to develop and use model organisms. The similarity between human and mouse on the cellular, histological but also on the organ level, their small body size, relatively cheap keeping conditions and short life-span makes mice an excellent model for ageing research. In this lecture we will assess the validity of the genetic mouse models of ageing. We will learn the major strategies for the development of rodent model organisms, namely the selective breeding and the cellular and genetic manipulation. As an example to the successful selective breeding strategy, we will learn about the generation and features of the SAMP8 strain. Mice with hyper-long telomeres are the result of a cellular manipulation and serve as a valuable basis to understand the role of telomere length in the ageing process.  There is a long list of mouse strains where a targeted genetic manipulation led to an altered life-span. In this lecture we will have a closer look to three separate group of lines, whereby genes involved in critical hallmarks of the aging process were modified. We will analyse first the phenotype of three lines, which show severe mitochondrial deficits due to the genetic deletion of genes critical to mitochondrial function. Next, we will have a closer look to the consequence of disturbed proteostasis and lastly to lines where the importance of insulin-signalling in the ageing process was finally proved and the precise role of the individual proteins in it was described.

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