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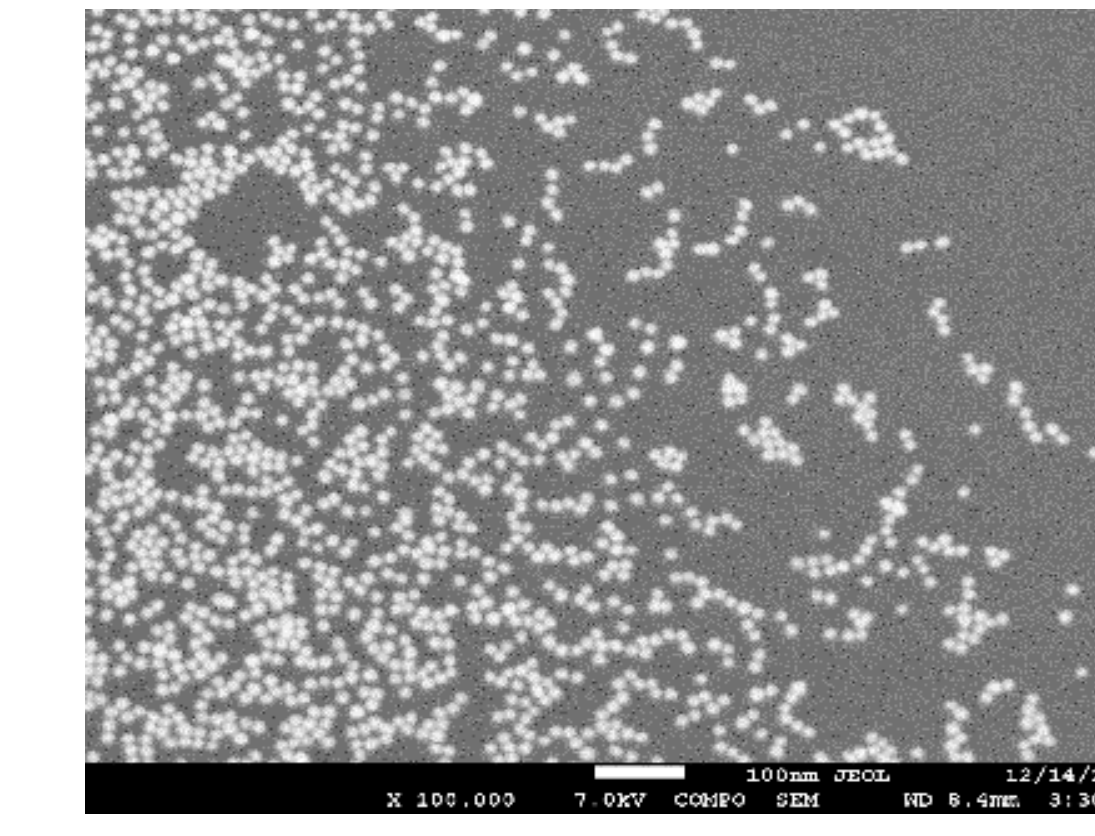
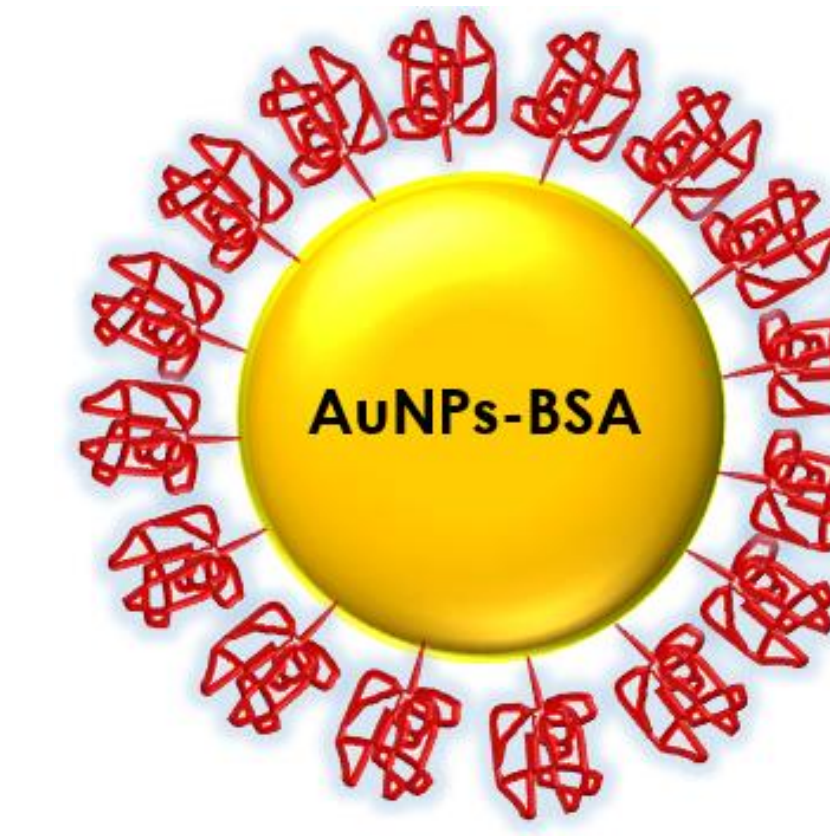
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## Introduction

Gold nanoparticles with their unique properties have a great potential in biology and medicine. They can be utilized as a treatment, diagnostic or delivery agent. As they are intended to be applied into the organism, it is important to be familiar with their biodistribution and fate. In our study we are interested in long-term scale biodistribution of 10 nm gold nanospheres coated with bovine serum albumin (AuNPs-BSA). AuNPs-BSA were applied to mice by intravenous injection in one shot. Mice were observed for 120 days and then liver and spleen were surgically extracted and analyzed. These organs represent potential ways, how gold nanoparticles could be cleared from the body.

Results indicate that the health status of mice was not affected by AuNPs-BSA application during the experiment. Gold was still detectable in organs after 120 days as well as these organs were slightly heavier than in control group. When the gold nanoparticles will be completely cleared from the body and if the increased weight of the organs in treated group is direct effect of the AuNPs-BSA application needs to be investigated.

## Material



(Filip Havel, IMG FNSPE)

C57BL/6

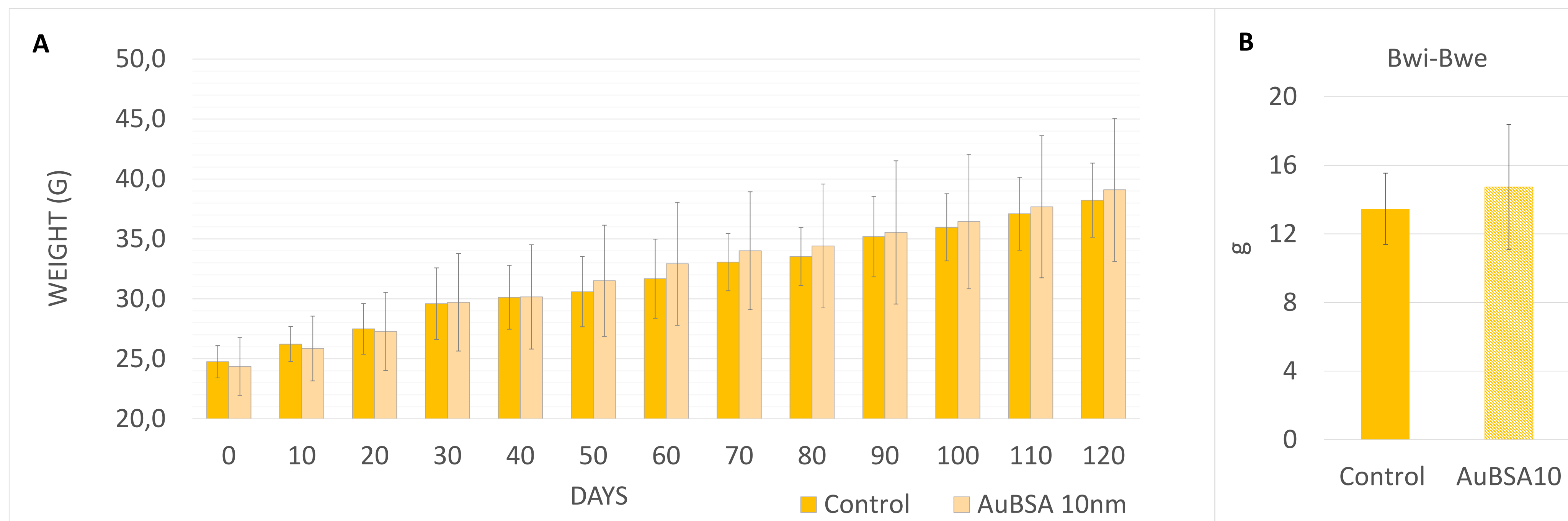


<https://www.jax.org/strain/000664>

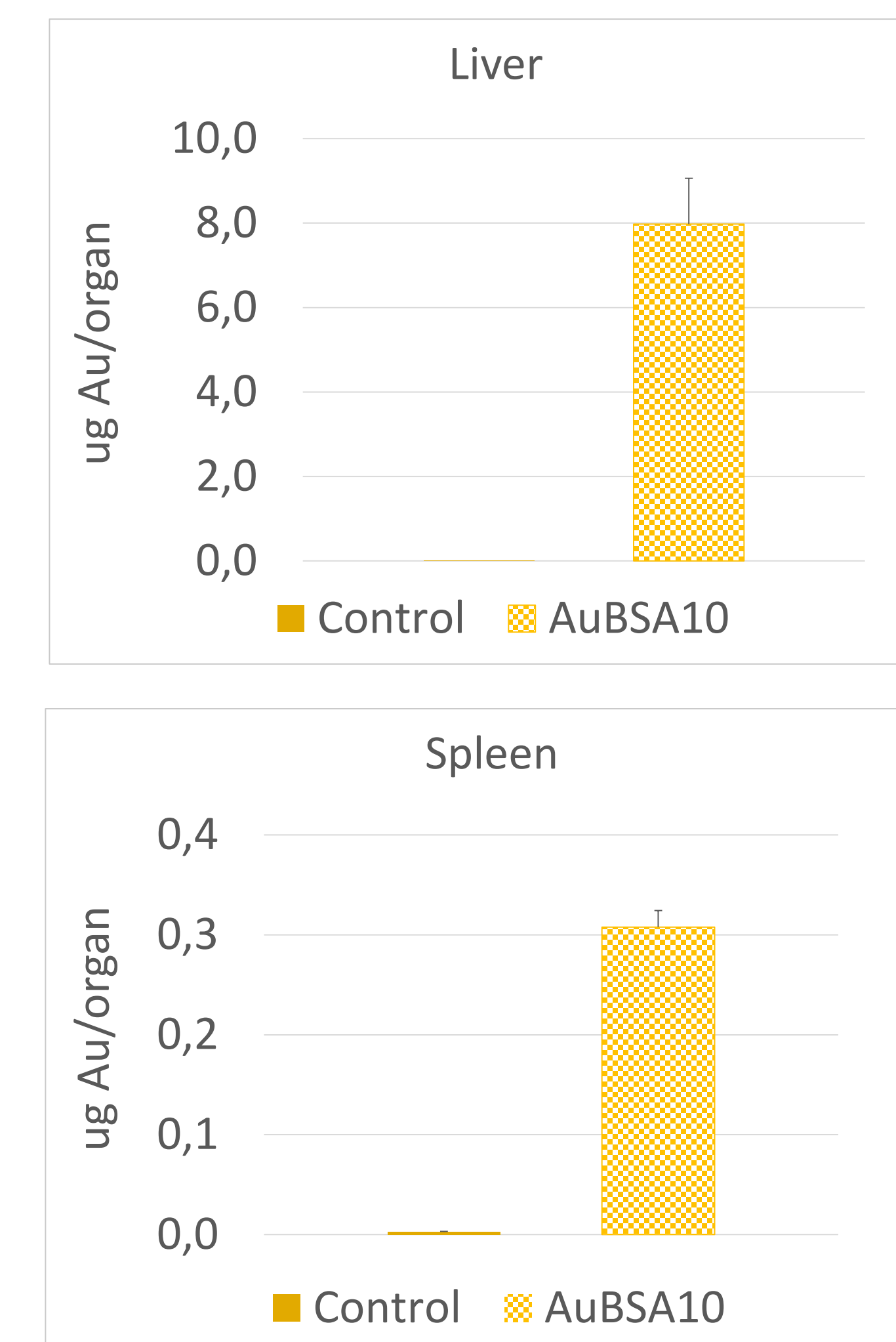
Dose: 1ug Au/1g mouse weight

The gold content in organ tissue was measured by atomic absorption spectrometry (AAS).

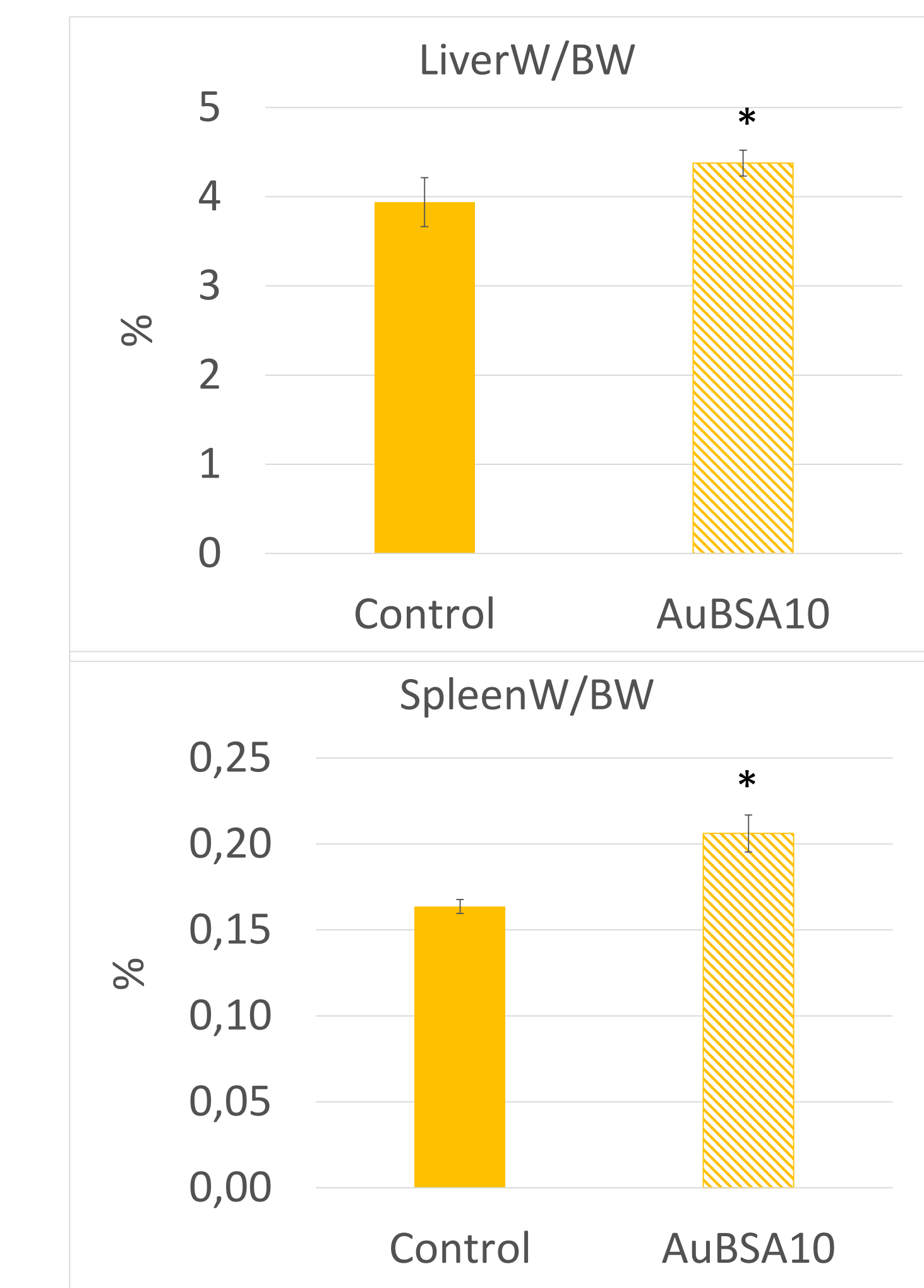
## Results



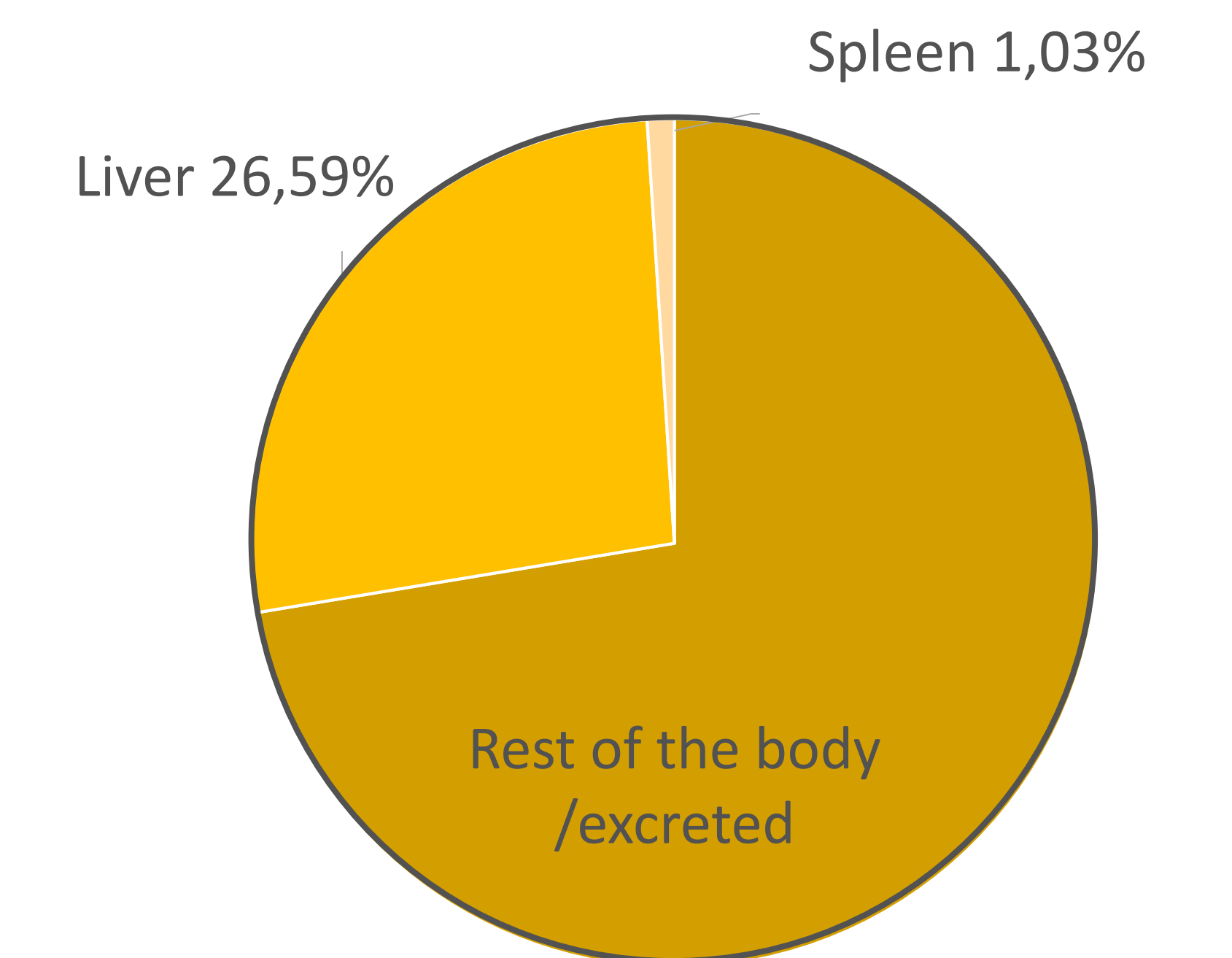
**Figure 1** A. Weight gain of the control group and the treated group. Mice were weighted repeatedly every 10 days. Day 0 – start of the treatment, Day 120 – end of the experiment. B. Difference between the initial and terminal body weight.



**Figure 2** Amount of gold in individual organs.



**Figure 3** Organ to body weight ratio after 120 days treatment. \*p<0,05



**Figure 4** Percentage of whole dose of gold in individual organs.

## Conclusion

- The health of mice in treated group was not affected by AuNPs application for the time of experiment, which makes them safe and suitable for future biomedical applications;
- AuNPs were accumulated in liver and spleen even 120 days after administration. This information could be used in therapy targeted into these organs.

## Acknowledgment

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