The development of the aneurysm can be induced via different procedures but in order to obtain precise localization and good reproducibility, we selected a surgical approach. It targets the abdominal aorta, one of the most common place of aneurismal formation in humans.

In order to be able to trigger the formation of aneurysm, the abdominal aorta is disengaged so that a gauze impregnated with 0.5M CaCl₂ can be applied to its periphery.

This treatment is intended to cause external damage to the artery, promoting inflammation as well as an arteriosclerotic reaction of the adventitia and subsequent formation of aneurysm.

As shown by Akira and al [5], taurine exerts a significant stabilisation effect on blood pressure in SHR rats: its increasing level could be related to a physiological response to the onset of hypertension.

As a result, the decrease in allantoin may reflect its arterial tension regulator effect, opposed to the onset of hypertension [4].

Finally, levels of citric acid intermediates are decreasing following the onset of hypertension. These changes would reflect a mitochondrial attack by the release of reactive oxygen species.

Aneurysm signature:

The development of the pathology and its return to normal are currently followed by the metabolomic approach on different biofluids such as urine, blood and cell extractions of aortic sections. The consequences of the placement of this new type of implant will then be assessed using the same approach.

References: