



Ex vivo mouse kidney slice experiment

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1 Works for me dx.doi.org/10.17504/protocols.io.baf9ibr6

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ABSTRACT

This protocol was used in a manuscript "Sodium-calcium exchanger 1 is the key molecule for urinary potassium excretion against hyperkalemia.

EXTERNAL LINK

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THIS PROTOCOL ACCOMPANIES THE FOLLOWING PUBLICATION

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MATERIALS TEXT

Hank's Balanced salt Solution

110 mM NaCl

3 mM KCl

1.2 mM MgSO

1.8 mM CaCl₂

4 mM Na acetate

1 mM Na citrate

6 mM D-glucose

6 mM L-alanine

1 mM NaH₂PO₄

3 mM Na₂HPO₄

25 mM NaHCO₃

- 1 Mice were deep anesthetized.
- 2 Make an incision then cut the skin from the bottom to the top of the mice followed the abdominal line with the round side of the scissors.
- 3 Cut the lateral skin to give free access to the abdomen.
- 4 With your finger, displace the intestine to the right, who should see the kidney.
- 5 Clip the sternum with the curve forceps, cut the ribs, do not cut the lungs, give access to the heart by moving the forceps. The heart should beat.
- 6 Pick the needle (22 gauge) through the right ventricle.
- 7 Cut the right auriula and perfused at 17 ml/min with Hank's balanced salt solution (HBSS) pH 7.4 at 37°C equilibrated with 5%CO₂/95%O₂
- 8 Perfuse, until the kidneys are clear of blood, the kidneys appear green-white.
- 9 Immediately, they were removed. Take out the capsule, cut the kidney in pieces of 3 to 5 mm thick.

- 10 Put these pieces in bubbling buffer at room temperature. Start immediately to cut thinner slices (approximately 0.5 mm) using a micro slicer (Natume Seisakusho CO., Ltd, Tokyo, Japan).
Cut from the cortex to the papilla in order to avoid kidney damages.
- 11 The slices were incubated at room temperature for 20 min in equilibrated HBSS for recovery before treatment.
The tissue slice should always be in bubbling solution.
- 12 Hold the tube in the 20 ml scintillation vial . The vial should contain 10 ml of drug solution (3 ml is the minimum).
- 13 The slices will be treated with drugs. Treatment should be in bubbling solution at room temperature.
- 14 After treatment, the slices were snap frozen in liquid nitrogen.