

# Introduction

1. Postmenopausal women have a higher incidence of intracranial aneurysmal rupture than men of the same age.

2. Previous studies showed that estrogen can protect against intracranial aneurysm formation and rupture through the activation of estrogen receptor- $\beta$  (ER- $\beta$ ) (Hypertension 63:1339-1344, 2014).

3. Equol, a phytoestrogen produced by the gut microbiota from dietary daidzein, is known to preferentially bind to ER- $\beta$ .

# Methods

Mice: 8 weeks old, C57BL/6J female

1. Equol study: Vehicle Control (VC, n=30), equol 0.5mg/day s.c. (Equol, n=30)

2. Daidzein study 1: Isoflavone free diet group (non-Iso, n=30), 0.1% daidzein diet group (Daidzein, n=30)

3. Daidzein study 2: Daidzein + Vancomycin (Daidzein + VCM, n=20), Daidzein + VCM + Equol (n=20)

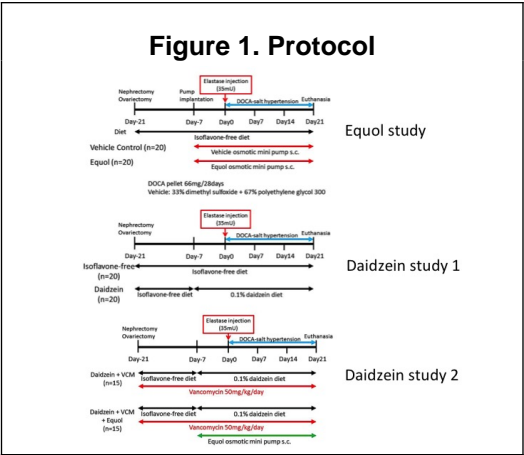
# Aim of the study

1. To verify equol supplement reduces intracranial aneurysm formation in ovariectomized female mice.

2. To verify dietary daidzein reduces intracranial aneurysm formation in ovariectomized female mice via gut microbiota.

# Protocol

- Bilateral ovariectomy**
  - Aneurysmal induction:**
    - Unilateral nephrectomy
    - Deoxycorticosterone acetate - salt (DOCA-salt) hypertension, DOCA 66mg/28days
    - Elastase injection (35mU) into the cerebrospinal fluid at right basal cistern
  - Diet:**
    - Isoflavone-free diet (AIN-93G)
    - Isoflavone-free with 0.1% daidzein diet
  - Neurological examination**
  - Criteria of euthanasia**
- Mice were assessed neurological symptoms once a day after aneurysm induction.
- Mice were euthanized when they developed neurological symptoms.
- All asymptomatic mice were euthanized 21 days after aneurysmal induction.



# Results

