CHAPTER 3

THEORETICAL FRAMEWORK, CONCEPTUAL FRAMEWORK, AND HYPOTHESIS

3.1. Theoretical framework

Based on the description in the literature, the theoretical framework is governed as follows:

Note:
- → : Signaling Pathway
- ✺ : Interfere
3.2. Conceptual Framework

Based on the description in theoretical framework, conceptual framework is governed as follows:

- Atherosclerotic vessel
- Mesenchymal stem cells administration
- Atherosclerosis event
  - Expression of IL-1α
  - Expression of IL-6
  - Expression of TGF-β1

3.3. Hypothesis

3.3.1. Major Hypothesis

Mesenchymal stem cells ameliorate atherosclerotic plaque by influencing the production of IL-1α, IL-6 and TGF-β1 cytokines.

3.3.2. Minor Hypothesis

a. Atherosclerotic plaque in Sprague Dawley rats that treated with allogeneic mesenchymal stem cells was lower than without allogeneic mesenchymal stem cells.

b. Abdominal aorta IL-1α expression of atherosclerotic Sprague Dawley rats that treated by allogeneic mesenchymal stem cells was different with without treated by allogeneic mesenchymal stem cells.
c. Abdominal aorta IL-6 expression of atherosclerotic Sprague Dawley rats that treated by allogeneic mesenchymal stem cells was different with without treated by allogeneic mesenchymal stem cells.

d. Abdominal aorta TGF-β1 expression of atherosclerotic Sprague Dawley rats that treated by allogeneic mesenchymal stem cells was different with without treated by allogeneic mesenchymal stem cells.