4. HYPOTHESIS AND RATIONALE

The proposed Ph.D. topic is designed based on the prior studies demonstrating the: (a) key role of Nrf2 in diabetes treatment; (b) ability of pharmacological agents such as pterostilbene to activate Nrf2; (c) potential of Nrf2-activating compounds to protect pancreatic β-cells thereby reduce the complications of diabetes; (d) strength of naringenin, to activate Nrf2. Based on above observations, we have hypothesized that naringenin can protect insulin secreting pancreatic β-cells from streptozotocin-induced degradation thereby help in the secretion of insulin, which ultimately effective treatment of diabetes. The rationale for our hypothesis is that naringenin activates Nrf2 thereby reduces the oxidative stress induced by streptozotocin which helps in promoting the number of healthy insulin secreting β-cells. Based on this hypothesis and the strong rationale supporting the hypothesis, I now propose to study the effect of naringenin on Nrf2 signaling in streptozotocin-induced diabetes with the following objectives.