CHAPTER FIVE: CONCLUSIONS

In summary, this study demonstrates that: 1. Atovarstatin therapy restored impaired flow-mediated, endothelium-dependent vasodilatation in STZ-induced diabetic rats; 2. Atovarstatin adminitration downregulated STZ-induced over expression of eNOS and high NAD(P)H activity in skeletal muscles; 3. Atorvastatin treatment decreased over-expression of vascular wall peptide cytokines (TNF-α, and IL-1β) and pro-inflammatory cell adhesion molecules (VCAM-1 and ICAM-1) in diabetic rats; 4. Atorvastatin treatment was associated with reduced activation of ERK1/2 and NF-κB p65 expression; 5. All these effects of atorvastatin were mediated without affecting cholesterol levels.

Conclusively, these findings provided an important clue in clarifying the molecular basis of the mechanisms by which STZ-induced diabetes leaded to oxidative excess, promoted vascular inflammation, resulting concomitantly in impaired endothelium-dependent vasodilatation. In addition, restoration of endothelial dysfunction, attenuation of oxidative stress, and amelioration of inflammation by avorvastatin administration independently of lipid levels, confirmed its pleiotropic effects and suggested a potential supportive treatment for cardiovascular disease.