6. SUMMARY AND CONCLUSION

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The present research clearly indicates that the successive methanol root extract of *Medicago sativa* possesses most significant and dose dependent *in vitro* inhibition of angiotensin-converting enzyme among other parts of *Medicago sativa*.

Antioxidant study of methanol extracts of different parts of *M. sativa* also supports the literature claim for using *M. sativa* as a preventive in hypertension.

Thin layer chromatography and High Performance Thin layer chromatography will provide an easy tool for quality control and standardization of *Medicago sativa* root methanol extract. Present HPTLC fingerprint study will be useful in herbal industry as an important evaluation parameter. It will be beneficial by helping to detect adulteration and in authentication of *M. sativa*, thereby ultimately benefitting the society.

From present research it can be concluded that methanol extract root of *Medicago sativa* is valuable to treat cardiovascular diseases, especially hypertension. GC-MS identification revealed presence of two compounds lupeol and didodecyl phthalate in *Medicago sativa* root methanol extract (MSRM) which are known for their cardiovascular effects. Isolation of lupeol from root is reported for first time in present study can be used to develop formulation from it. Besides this, several other class of phytoconstituents are also present in *Medicago sativa* root methanol extract (MSRM) which have a potential in treatment of hypertension.

Thus, *Medicago sativa* can be safer, economical and effective alternative to modern antihypertensive medicine. Further research can be done on isolated lupeol to develop nutraceutical or pharmaceutical formulation to treat hypertension and several cardio vascular diseases, especially alcoholic formulations such as Asava & Arishta of *M. sativa* root. Analysis using GC-MS also opens up future door for phytochemical and pharmacological studies of *M. sativa* root.