CHAPTER VII
CONCLUSION

Murine monoclonal antibody clone LPF1specific against pathogenic *Leptospira* was characterized for its therapeutic efficacy against heterologous *Leptospira* both *in vitro* and *in vivo*. The MAb has potential application for using as therapeutic antibody against leptospirosis.

The murine scFv (*muscFv*) was successfully constructed from cDNA of protective LPF1 hybridoma. The murine immunoglobulin frameworks (FRs) and complementarity determining regions (CDRs) of both heavy and light chain were identified and successfully grafted its murine CDRs to the most match human immunoglobulin framework to produce humanized scFv (*huscFv)*. Recombinant muscFv and huscFv antibody were produced in *E. coli* and their protein was purified by ion-exchange column chromatography.

Purified muscFv and huscFv antibody retained the antigenic specificity to pathogenic *Leptospira* as original murine MAbLPF1 in Western blot analysis. Both muscFv and huscFv can inhibit RBC hemolysis caused from pathogenic *Leptospira interrogans* serogroup Pomona serovar Pomona *in vitro* and protected hamsters from lethal leptospirosis *in vivo*.