# CHAPTER V

## CONCLUSION

N-(4-Methyl-2-propyl-4-pentenoyl) urea, N-(2-propyl-4-pentenoyl) urea, N-(4-methyl-2-(2′-methyl-2′-propenyl)-4-pentenoyl) urea and N-(2-allyl-2-pentenoyl) urea were synthesized as analogues of N-(2-propylpentanoyl) urea. Since the structures of these compounds are in the acylurea class, they would be expected to possess an anticonvulsant activity. The designed compounds were also expected to be the potent, broad spectrum and safety anticonvulsants.

The synthetic route of these compounds involved with 5 reactions:

1. Alkylation of malonic esters with appropriated alkyl halides, using sodium ethoxide as a base, to form the disubstituted malonic esters.

2. Decarbalkoxylation of disubstituted malonic esters with LiCl-$H_2O$-DMSO give the monoester products.

3. Hydrolysis of esters by the use of 80% alcoholic potassium hydroxide solution to obtain monocarboxylic acid.

4. Chlorination of monocarboxylic acids by thionyl chloride to produce the reactive acid chlorides.

5. Acylation of urea by the appropriated acid chlorides in benzene, using potassium carbonate as a base, to acquire the corresponding final products.

Two of the products, N-(4-methyl-2-propyl-4-pentenoyl) urea and N-(2-propyl-4-pentenoyl) urea, each is a racemic mixture; having a chiral center at the methine carbon adjacent to carbonyl carbon. However, the two enantiomers cannot be discriminated by $^{1}H$- and $^{13}C$-NMR spectroscopic techniques.

The configurations of this compound are interesting to study the effect to their anticonvusant activity and toxicity that may lead to the discovery of the active enantiomer, which will benefically used to design a new lead compound.