

CHAPTER V

CONCLUSION

The electrospinning process can be used to produce drug delivery material by adding the drug in the solution directly. For producing fine fibers, the electrostatic forces ranged from 7.5 to 22.5 kV were used.

1. In the first part, the ethanol was used as a solvent. Eudragit EPO can be formed fiber without bead at 25 and 30%. At 35%, the fibers can not be formed since the viscosity is too high. Eudragit RLPO can be formed fiber without bead at 20, 25, and 30%. Lastly, Eudragit L100 can be formed fiber at 10, 15, and 20%. It was seen that the high viscosity polymer solution could not be formed the fibers since the electrostatic force can not be overcome the surface tension and viscoelastic force.

2. In the second part, the mixture solvent of ethanol and ethyl acetate (1:1) by volume was used since the ethanol has high evaporation rate. Then, the ethyl acetate was used to decrease the evaporation rate. The selected conditions that formed fibers in the first part were used to load the drug in this part. It can be seen that no difference between loaded drug fibers and unloaded drug fibers in surface morphology.

3. The cast films were used to compare the ability of drug released with the obtained electrospun fibers. It was seen that EPO electrospun released the drug more than in the cast film at the end of the period while RLPO cast film released the drug at starting point higher than RLPO electrospun fibers and then released steadily through the increasing time. Lastly, L100 electrospun can be released the drug more than cast film samples at the end of 24 hours, but it can observe that the profile of L100 cast films started at higher concentration than as-spun fibers.

By the way, these polymers can be used incorporated to form the drug delivery material that gives a good characteristic of drug release, for example, the short time acting and sustain release drug delivery material.