IX. SUMMARY AND CONCLUSION

The present study was carried out for development and evaluation of osmotically controlled oral drug delivery system by taking NSAID as category and Eterocoxib, celecoxib and Lornoxicam as a model drug can be summarized as follows:

- Osmotically controlled oral drug delivery system can be utilized for delivery of active ingredient at zero-order.
- The semipermeable membrane formed by using cellulose acetate as a polymer and castor oil as a plasticizer, allowed the passage of water and selective in nature, which was necessary for the zero-order release of drug.
- The membrane formed by using polyethylene glycol as a plasticizer cannot act as a semipermeable while it behaves as a microporous membrane, which cannot deliver drug at zero order rate.
- The release rate of drug from microporous membrane was higher than semipermeable membrane.
- The release of drug from the osmotic pump was inversely proportional to the membrane thickness, which can be related to the membrane weight.
- The thickness of 40 μm of semipermeable membrane was sufficient to maintain the shape of osmotic pump during the operating life of 14 hours or more, while further increase in thickness can be used as a parameter to sustain the rate of release of the drug.
- The release of drug from the osmotic pump was unaffected by the environmental factor such as pH of dissolution media.
- The release rate was also unaffected by intensity of agitation of dissolution fluid.
- The diameter of orifice does not significantly affect the release rate of drug if the diameter was maintained certain limit of operation.
CONCLUSION

It can be concluded from the present study and the results obtained that the osmotic pump for release of

1) Etoricoxib can be developed as a once a day dosage form (O.D.) Zero-order release rate can be obtained by using cellulose acetate as a polymer and castor oil as a plasticizer. In osmotic delivery systems, osmotic pressure provides the driving force for drug release. Increasing pressure inside the dosage form from water incursion causes the drug to release from the system. The major advantages include precise control of zero-order or other patterned release over an extended time period consistent release rates can be achieved irrespective of the environmental factors at the delivery site. Controlled delivery via osmotic systems also may reduce the side-effect profile by moderating the blood plasma peaks typical of conventional (e.g., instant release) dosage forms.

2) Celecoxib can be developed as a twice a day dosage form (B.D.) Zero-order release rate can be obtained by using cellulose acetate as a polymer and castor oil as a plasticizer. In osmotic delivery systems, osmotic pressure provides the driving force for drug release. Increasing pressure inside the dosage form from water incursion causes the drug to release from the system. The major advantages include precise control of zero-order or other patterned release over an extended time period consistent release rates can be achieved irrespective of the environmental factors at the delivery site. Controlled delivery via osmotic systems also may reduce the side-effect profile by moderating the blood plasma peaks typical of conventional (e.g., instant release) dosage forms.

3) Lornoxicam is developed as a twice a day dosage form (B.D.) Zero-order release rate can be obtained by using cellulose acetate as a polymer and castor oil as a plasticizer. In osmotic delivery systems, osmotic pressure provides the driving force for drug release. Increasing pressure inside the dosage form from water incursion causes the drug to release from the system. The major advantages include precise control of zero-order or other patterned release over an extended time period consistent release rates can be achieved irrespective of the environmental factors at the
delivery site. Controlled delivery via osmotic systems also may reduce the side-effect profile by moderating the blood plasma peaks typical of conventional (e.g., instant release) dosage forms.