HPLC method was developed, validated as per ICH guideline and performed for the determination of esomeprasole magnesium trihydrate in tablets using a C18 column, the mobile phase was ACN/phosphate buffer (60:40,v/v, pH 7) with a flow rate of 1.0 ml/min was applied. UV detection at 205 nm using lansoprazole as an internal standard. The calibration curve of esomeprazole was linear in the range of 100~1000 µg/ml (r = 0.9992, n=4). And The mean recovery for esomeprazole from tablets ranged between 97.82~98.22% (Onal A., *et al*., 2006).

As can be seen from the above studies no method was developed for simultaneous determination of esomeprazole and tadalafil in pharmaceutical formulation accordingly we conduct this research.

1.8 Literature Survey for Determination of Tadalafil

RP-HPLC method for estimation of tadalafil in dosage forms was developed and validated , using a Agilent Eclipse XBD C18 column (150 X 4.6mm i.d., 5µm particle size) with mobile phase, acetonitrile and buffer solution (50:50v/v), at a flow rate of 1.2ml/min. at 282nm, methanol was used as diluent (Alivelu Samala,*et al*.,2013).

Direct reverse phase high performance liquid Chromatography method has been published for the estimation of tadalafil in Tablet dosage form . the method was validated and conducted by using a mobile phase composition of (70:30) buffer : acetonitrile, pH adjusted to 4, flow rate and UV detection was 0.8ml/min, 277 nm respectively (Kamepalli Sujana, *et al*., 2012).

Simultaneous determination of tadalafil and dapoxetine in solid dosage form was achieved through RP-HPLC method, Water Symmetry C-18 (150x4.6mm), 5µ and a mobile phase composed of Buffer : Acetonitrile (65:35). The retention time of Tadalafil