As seen from the given results and chromatograms, show that esomeprazole and tadalafil are well seperated from their degradation products (HCl, NaOH).

3.9 Statistical Analysis

The row data forced to ANOVA to single factor statistical analysis to define the significance changes in data obtained by proposed method**.**

3.9.1 ANOVA Single Factor test for Esomeprasole Validation Data
3.9.1.1 Method Reproducibility
3.9.1.1.1 Variation of Analysis

ANOVA statistical method is used to analyze the differences between group means and their associated procedure. Also ANOVA provides a statistical information of whether or not the means of several groups are equal, and therefore generalizes t-test to more than two groups. In addition ANOVAs are useful in comparing three or more means (groups or variables) for statistical significance.

Table (26): ANOVA single factor of Esomeprazole for Variation of day and equipment

Analysis of Variance (One-Way) Summary						
Groups	**Sample size**	**Sum**	**Mean**	**Variance**		
Day 1	6	601	100.1667	2.090667		
Day 2	6	606.1	101.0167	0.413667		
ANOVA						
Source of Variation	**SS**	**Df**	**MS**	**F**	**p-level**	**F crit**
Between Groups	2.1675	1	2.1675	1.731	0.217647	4.964603
Within Groups	12.52167	10	1.252167			
Total	14.68917	11				

The above results show that, F value is less than F critical, and p-level value was less than 1 so the data obtained by this research is statistically significant.