



## Famotidine determination in pure and pharmaceutical formulations by zwitterionic chromatography-hydrophilic interaction liquid chromatography

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**Abstract:** Sulfobetaine exchanger (ZIC-HILIC<sub>1</sub>) with largely capacity (432  $\mu\text{eq g}^{-1}$ ) was obtained by attachment sulfobetaine monomer with one methylene between charges ( $\text{H}_2\text{C}=\text{CHC}_6\text{H}_4\text{CH}_2\text{N}^+(\text{CH}_3)_2\text{-CH}_2\text{-SO}_3^-$ ) onto a PS/DVB particles was investigated for chromatographic separation of famotidine. The retention behavior of famotidine was investigated with eluent at various Acetonitrile contain, sodium acetate buffer concentrations and pH. The separation mechanism is according to hydrophilic interaction liquid chromatography and cation exchange which leads to a mixed mode for the famotidine. A calibration graph it was created for ZIC-HILIC<sub>1</sub> exchanger and it was found that the linear range (20-800  $\text{ng.ml}^{-1}$ ), RSD% (0.72-1.76), LOD (4.10  $\text{ng.ml}^{-1}$ ), LOQ (13.64  $\text{ng.ml}^{-1}$ ).

**Keywords:** Zwitterionic chromatography, Sulfobetaine stationary phases, famotidine, Retention mechanism, ion exchange.

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