

IMPROVEMENT OF ELECTROPHORETIC ENANTIOSEPARATION OF AMLODIPINE BY POLYBRENE

ZANDKARIMI MAJID*, SHAFATI ALIREZA, FOROUTAN SAYYED MOHSEN, LUCY CHARLES A.

* SCHOOL OF PHARMACY, ZABOL UNIVERSITY OF MEDICAL SCIENCES, ZABOL, IRAN

In chiral and non-chiral electrophoretic resolution of basic drugs, adsorption of analytes to negatively charged capillary wall could lead to poor repeatability of migration time and peak area. In addition, chiral resolutions of basic drugs are commonly performed in low pH buffers.

Therefore, longer analysis time due to suppression of electroosmotic flow (EOF) is another dilemma. In this work the improvement effect of polybrene (PB), a cationic polymer, on chiral separation of a model basic drug, amlodipine (AML), was investigated. PB both as a semi-permanent coating agent and as an additive in the running buffer was utilized. Better results were obtained with PB as a buffer additive. Compare to untreated bare silica without using PB in running buffer, addition of 0.0001% PB to buffer decreased analysis time down to 1/10 folds; efficiency improved up to 10 folds; limit of detection (LOD) and limit of quantification (LOQ) down to 1/10 folds and within-day migration time and peak area repeatabilities, in terms of relative standard deviations (RSD) down to 1/10 and 1/10 folds, respectively.

Keyword: CAPILLARY ELECTROPHORESIS, CAPILLARY COATING, CHIRAL SEPARATION, AMLODIPINE, POLYBRENE