



Stability indicating thin-layer chromatographic determination of framycetin sulphate as bulk drug: Application to forced degradation study

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Abstract:The objective of present work was to develop a validated stability indicating high performance thin layer chromatographic method (HPTLC) for estimation of framycetin sulphate. The stationary phase used was precoated silica gel aluminium plates 60 F-254 with 250 μm thickness. The mobile phase used for separation was acetonitrile: methanol: water (7.5: 0.5: 2: v/v/v) gave a resolved peak at (R_f value of 0.46 ± 0.02). Framycetin sulphate was subjected to hydrolytic, oxidative, dry heat and photo treatment degradation. The drug was found to degrade in hydrolytic, oxidative, dry heat conditions and there was no degradation in photolytic conditions. All the peaks of degraded products were separated from the standard drug with significantly different R_f values of its degradants. The drug showed two degradant peaks in acidic medium at R_f value of 0.02 ± 0.02 , 0.38 ± 0.02 . In basic medium two degradant peaks at R_f value of 0.23 ± 0.02 , 0.36 ± 0.02 . Oxidative hydrolysis showed three degradants which were resolved at R_f value of 0.25 ± 0.02 , 0.60 ± 0.02 , 0.79 ± 0.02 . Dry heat degradation was observed with two resolved peaks at R_f value of 0.09 ± 0.02 , 0.60 ± 0.02 . There was no degradation observed in photochemical degradation. The developed method can effectively separate the drug from its degradation products under accelerated degradation studies; it can be routinely employed as stability indicating method for framycetin sulphate.

Key words: Framycetin sulphate, Thin layer chromatography, Stability indicating method.