**INTRODUCTION**

Mangiferin, a polyphenolic flavonoid glucosylxanthone, primarily exists as a principal phytoconstituent in the leaves and stem bark of *M. indica.* The presence of the phenolic xanthone moiety owes to induced oxidative stress. The importance of mangiferin as an immunomodulator, antioxidant, antimicrobial, antiviral and anticancer agent applications of mangiferin include antidiabetic, antiobesitic potential, antiosteoclastogenic, antiasthmatic, antidiarrhoe.

**METHODOLOGY (RSM)**

The final developmental phase composition was selected as Ethyl acetate: acetic acid: formic acid: water in 7:1:1:1, v/v/v/v ratio was finally selected as the optimized combination owing to apt chromatographic separation for mangiferin. The mobile phase containing mixture of ethyl acetate: acetic acid: formic acid: water in 7:1:1:1, v/v/v/v ratio was successfully developed employing AQbD approach for quantification of mangiferin in plasma.

**RESULTS**

Standard Calibration Linearity Graph (50–800 ng/band) of Mangiferin, showing the peaks at 262 nm with Rf 0.68±0.02, with all other parameters being within the acceptance limits. Method validation studies revealed high linearity for mangiferin peak height, capacity factor, theoretical plates and separation number. Response Surface Methodology (RSM) was developed for the internal standard design (CARD) and for the internal standard method (CIMA) selected initially from the screening studies. The mobile phase containing mixture of ethyl acetate: acetic acid: formic acid: water in 7:1:1:1, v/v/v/v ratio was successfully developed employing AQbD approach for mangiferin in plasma.

**CONCLUSIONS**

- A simple, rapid, sensitive and economical bioanalytical method has been successfully developed employing AQbD approach for quantification of mangiferin in plasma.
- The methodological validation studies corroborated excellent linearity, accuracy, precision, and system suitability of the developed HPTLC method.

**REFERENCES**
