

## **ABSTRACT**

A new separation and quantification method using ultra high-performance liquid chromatography (UHPLC) with UV detection was developed for the detection of sibiromycin in fermentation broth of *Streptosporangium sibiricum*. The solid phase extraction method based on cation-exchange was employed to pre-concentrate and purify fermentation broth containing sibiromycin prior to UHPLC analysis. The whole assay was validated and showed a linear range of detector response for the quantification of sibiromycin in a concentration from 3.9 to 250.0 µg/ml, with correlation coefficient of 0.999 and recoveries rating from 71.66±3.55 % to 74.75±5.18 %. Method limit of quantification of the assay was determined as 0.18 µg/ml and was verified with resulting RSD of 9.6 % and accuracy of 97.6 %. The developed assay was used to determine the sibiromycin production in 12 different fermentation broths. Moreover, several natural sibiromycin analogues/derivatives were described with pilot characterization using off-line mass spektrometry.