3.1.4 Linearity

Linearity of any calibration curve is evaluated through regression factor (R^2) which reflects the strength of the correlation coefficient of a standard calibration curve where the best linear relationship must be more than 0.99 according to EMEA guidelines. Summary of all R^2, slope and intercept data of the six calibration curves are shown in **table 3.12.**

Table 3.12 Summary of all R^2, slope and intercept data of the six calibration curves.

Calibration Curve	R squared	Slope	Intercept
1	0.998979	0.000291	-0.009599
2	0.999557	0.000280	-0.009433
3	0.999717	0.000280	-0.008644
4	0.997693	0.000314	-0.010435
5	0.998913	0.000302	-0.010204
6	0.999025	0.000297	-0.011663
Mean	0.998981	0.000294	-0.009996
STD	0.000713	0.000013	0.001031
CV%	0.071333	4.497005	

Intra-day validation

Calibration curve of the first, second, and third day of validation are shown in **tables 3.13, 3.14 and 3.15**, respectively representing an accuracy range of (96.20%-108.68%), (94.17%-106.11%) and (92.23%-114.74%), respectively.

Stability validation

Calibration curve of freeze-thaw test, bench-top test, and autosampler test of stability are shown in **tables 3.16, 3.17 and 3.18**, respectively representing an accuracy range of (90.61%-111.71%), (92.15%-114.55%) and (93.13%-113.52%), respectively.