# Supporting information

# TLC-spectrodensitometric method for simultaneous determination of dapagliflozin and rosuvastatin in rabbit plasma: Stability indicating assay and kinetic studies

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**Table S1:** Selection of mobile phase applied for separation of DAPA and ROSV.

| Mobile phase | Ratio (v: v) | $R_f$ value | |
|---|---|---|---|
| | | DAPA | ROSV |
| Toluene: Methanol [a] | 7:5 | 0.89 | 0.75 |
| | 5.5 | 0.86 | 0.74 |
| | 5:1 | 0.86 | 0.75 |
| Ethyl acetate: Acetonitrile [b] | 5:1 | 0.76 | 0.86 |
| | 6:1 | 0.78 | 0.88 |
| | 5:5 | 0.69 | 0.85 |
| Ethyl acetate: Methanol | **5:0.1** | **0.23** | **0.44** |
| | 5:5 | 0.78 | 0.89 |
| | 4:0.1 | 0.58 | 0.67 |

***a* Not well separated**

***b* Tailed Spots**

**Table S2:** Selection of saturation time applied for separation of DAPA and ROSV.

| Saturation time (min) | $R_f$ of DAPA | % RSD [a] | $R_f$ of ROSV | % RSD [a] |
|---|---|---|---|---|
| 15 | 0.37 | 10.32 | 0.59 | 11.08 |
| 20 | 0.37 | 8.02 | 0.58 | 9.17 |
| 25 | 0.30 | 5.31 | 0.52 | 5.87 |
| **30** | **0.23** | **2.11** | **0.44** | **2.23** |
| 40 | 0.22 | 3.85 | 0.43 | 3.22 |
| 45 | 0.20 | 2.53 | 0.42 | 2.75 |

[a] Average of five readings.

**Table S3.** Intra-day and inter-day precision of the TLC method for determination of DAPA and ROSV (n=6)

| Drug | Amount (ng/band) | Intra-day Found ± SD | %RSD | Inter-day Found ± SD | %RSD |
|---|---|---|---|---|---|
| DAPA | 500 | 488.68 ± 12.71 | 2.60 | 487.65 ± 11.32 | 2.32 |
| | 1500 | 1460.63 ± 28.28 | 1.93 | 1456.53 ± 43.19 | 2.96 |
| | 2500 | 2512.83 ± 75.50 | 3.00 | 2494.32 ± 95.09 | 3.81 |
| ROSV | 500 | 495.70 ±11.97 | 2.41 | 474.14 ± 15.40 | 3.20 |
| | 1500 | 1458.00 ± 43.97 | 3.01 | 1533.33 ± 44.98 | 2.93 |
| | 2500 | 2473.80 ± 94.92 | 3.83 | 2577.63 ± 61.06 | 2.36 |

**Table S4**. Robustness of the proposed TLC for analysis of 100 ng/band DAPA and 250 ng/ band ROSV (n=3).

| Parameters | % Recovery ± SD | |
|---|---|---|
| | DAPA | ROSV |
| No variation | 101.5 ± 2.03 | 99.2 ± 2.19 |
| **Mobile phase composition** | | |
| Ethyl acetate: Methanol (v/v) 5.1:0.1 | 100.1 ± 0.56 | 100.1 ± 1.05 |
| 5:0.11 | 99.3 ± 1.39 | 100.8 ±1.35 |
| Chamber saturation time (30 min) optimized | | |
| (a) 27 min. | 98.6 ± 1.32 | 99.3 ± 1.48 |
| (b) 33 min. | 100.4 ±1.62 | 101.1 ± 0.72 |
| Migration distance (7cm) optimized | | |
| (a) 6.7 cm | 98.6 ± 1.47 | 101.2 ± 0.19 |
| (b) 7.3 cm | 99.4 ± 0.86 | 99.3 ± 0.85 |

**Table S5:** Standard Addition Method for the Assay of the investigated drugs in dosage form

| Pharmaceutical tablets | Authentic added (ng/band) ** | Authentic found (ng/band) | Recovery (%) ± SD* |
|---|---|---|---|
| FORXIGA ® | 0 | 0 | 98.5 ± 0.50 |
| | 500 | 494.93 | 98.9 ± 3.38 |
| | 1000 | 1009.17 | 100.9 ± 3.76 |
| | 1500 | 1498.45 | 99.8 ± 2.99 |
| ROSUVAST® | 0 | 0 | 99.4 ± 2.19 |
| | 250 | 247.83 | 99.1 ± 2.43 |
| | 500 | 497.43 | 99.5 ± 2.60 |
| | 750 | 751.06 | 100.1 ± 3.26 |

*Average of three determinations.

** Amount of sample taken in standard addition study is 1000 and 500 ng /band for DAPA and ROSV, respectively.

**Table S6**: Peak purity and ide
simultaneous determination o

| Solutions | Concentration (ng/band) | r (s, m)[a] | r (m, e) |
|---|---|---|---|
| DAPA standard solution | 1000 | 0.9997 | 0.9998 |
| DAPA sample solution | 1000 | 0.9995 | 0.9997 |
| ROSV standard solution | 500 | 0.9985 | 0.9998 |
| ROSV sample solution | 500 | 0.9996 | 0.9980 |

a Correlation Coefficient from start to maximum position of the spectrum.

b Correlation Coefficient from maximum to end position of the spectrum.

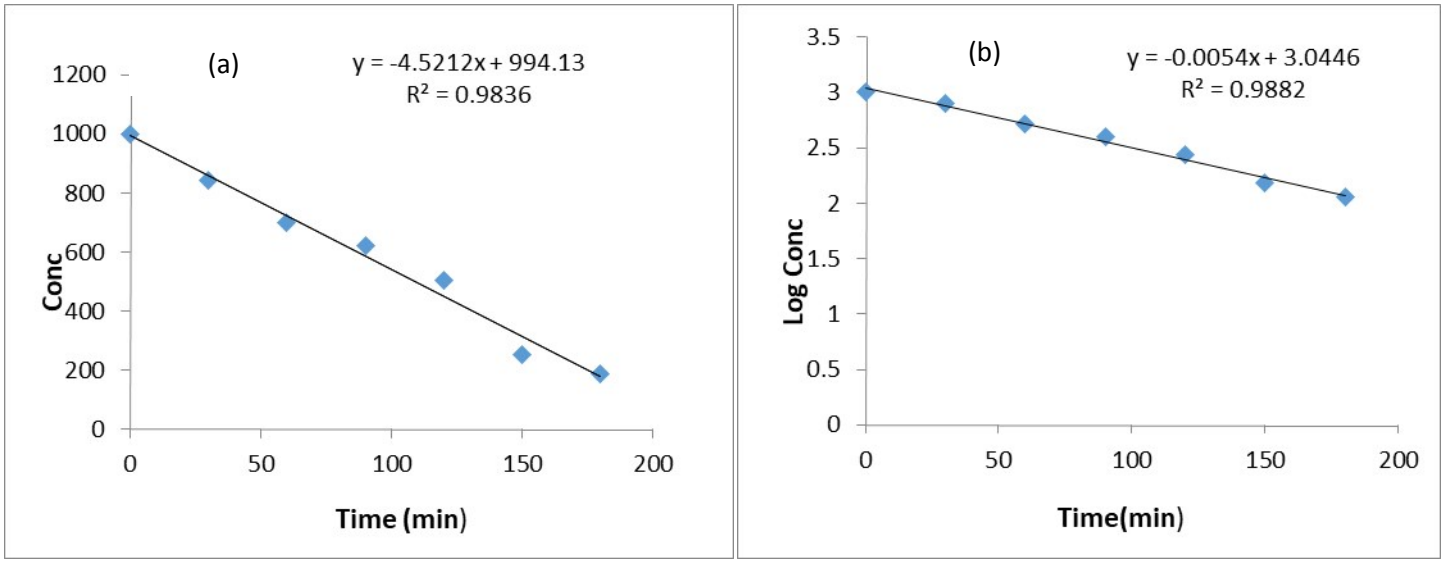


**Fig. S1:** The linear plots of concentration versus time (min) for the photo-degradation of DAPA (a) and ROSV (b).