**Supplement and Supporting Data (SSD)**

**Influence of *Momordica Charantia*****(Bitter Melon) Extract on Rosuvastatin Pharmacokinetics and Anticancer Properties: An In Vitro Evaluation Using HPLC**

**Table S1.**  Effect of *M. Charantia* Extract on Rats.

|  |  |
| --- | --- |
| Assessment Criteria | Observation |
| Urine output volume | Increased urine output volume (p-value = 0.058) |
| Mobility | Unchanged (no hindrance, inability to move freely) |
| Appearance | Unchanged (no observable abnormalities in skin, coat, posture, or size) |

**Table S2.**  Calibration Curve of Rosuvastatin

|  |  |  |  |
| --- | --- | --- | --- |
| Concentration (ng/mL) | Area | Internal Standard (IS) | Area Ratio |
| 40 | 4001 | 231125 | 0.017311 |
| 100 | 8247 | 219155 | 0.037631 |
| 150 | 12536 | 232931 | 0.053819 |
| 250 | 20314 | 228896 | 0.088748 |
| 500 | 46359 | 232183 | 0.199666 |
| 1000 | 82746 | 208230 | 0.397378 |
| 2000 | 160583 | 221701 | 0.724322 |

**Table S3.**  Quality Control Data for Rosuvastatin Analysis

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| QC | Day | Replicate # | Conc ng/mL | Accuracy | S.D. | Mean conc. | CV % |
| QCL | **Day 1** | 1 | 130.7 | 100.5 | 2.01 | 127.9 | 1.57 |
| 2 | 126.0 | 96.9 |
| 3 | 127.8 | 98.3 |
| 4 | 126.1 | 97.0 |
| 5 | 129.1 | 99.3 |
| **Day 2** | 1 | 133.5 | 102.7 | 2.67 | 131.9 | 2.02 |
| 2 | 130.8 | 100.6 |
| 3 | 128.5 | 98.8 |
| 4 | 135.4 | 104.2 |
| 5 | 131.1 | 100.9 |
| QCM | **Day 1** | 1 | 1057.4 | 105.7 | 31.23 | 1017.7 | 3.07 |
| 2 | 970.4 | 97.0 |
| 3 | 1022.7 | 102.3 |
| 4 | 1013.5 | 101.3 |
| 5 | 1024.4 | 102.4 |
| **Day 2** | 1 | 1019.2 | 101.9 | 17.01 | 1013.9 | 1.68 |
| 2 | 1010.6 | 101.1 |
| 3 | 994.2 | 99.4 |
| 4 | 1039.7 | 104.0 |
| 5 | 1005.9 | 100.6 |
| QCH | **Day 1** | 1 | 1561.6 | 97.6 | 49.4 | 1604.9 | 3.08 |
| 2 | 1633.8 | 102.1 |
| 3 | 1644.5 | 102.8 |
| 4 | 1541.3 | 96.3 |
| 5 | 1643.0 | 102.7 |
| **Day 2** | 1 | 1579.2 | 98.7 | 40.6 | 1600.7 | 2.54 |
| 2 | 1543.8 | 96.5 |
| 3 | 1645.4 | 102.8 |
| 4 | 1604.7 | 100.3 |
| 5 | 1630.4 | 101.9 |

**Table S4.**  Quantitative Analysis of Rosuvastatin with and Without *M. Charantia*

|  |  |  |
| --- | --- | --- |
| Time (h) | G4 *M. Charantia* + Rosuvastatin (ng/mL) | G2 Rosuvastatin (ng/mL) |
| 0 | 0 | 0 |
| 0.5 | 204 | 512.9 |
| 1 | 386 | 577.7 |
| 2 | 514 | 653.3 |
| 2.5 | 737 | 682.3 |
| 3 | 847 | 717.1 |
| 5.5 | 956 | 613.8 |
| 8 | 613 | 403.6 |
| 24 | 0 | 75.3 |
| 48 | 0 | 60.8 |

**Table S5.** Pharmacokinetic Parameters Results

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group 2 rosuvastatin |  |  | Rat # | Apparent T0.5 (h) | Apparent Kel (h-1) | Tmax (h) | Cmax (ng/mL) | AUC last |
|  |  | **1** | 24.6 | 0.028 | 3 | 921 | 4407.2 |
|  |  | **2** | 15.5 | 0.045 | 3 | 348.3 | 6079.7 |
|  |  | **3** | 8.4 | 0.083 | 2.5 | 1112.6 | 9094.0 |
|  |  | **4** | 7.9 | 0.088 | 5.5 | 1151.9 | 15422.0 |
|  |  | **5** | 10.5 | 0.066 | 1 | 1562.9 | 17712.7 |
|  |  | **6** | 41.8 | 0.017 | 1 | 598.6 | 10146.2 |
|  |  | **7** | 5.8 | 0.12 | 5.5 | 404.6 | 7418.9 |
|  |  | **8** | 7.6 | 0.091 | 5.5 | 696.6 | 10634.9 |
|  |  | **Average** | **15.3** | **0.07** | **3.4** | **849.6** | **10114.4** |
|  |  | **STD** | **12.3** | **0.04** | **1.9** | **415.8** | **4525.1** |
| Group 4 rosuvastatin + *M. Charantia* |  |  | **Rat #** | **Apparent T0.5 (h)** | **Apparent Kel (h-1)** | **Tmax (h)** | **Cmax (ng/mL)** | **AUC last** |
|  |  | **1** | 4.0 | 0.17 | 5.5 | 980 | 12628 |
|  |  | **2** | 2.3 | 0.31 | 5.5 | 929 | 11059.3 |
|  |  | **3** | 2.8 | 0.25 | 5.5 | 989 | 11107.3 |
|  |  | **4** | missing | missing | 5.5 | 924 | 5093.3 |
|  |  | **5** | 3.8 | 0.18 | 5.5 | 986 | 10743.8 |
|  |  | **6** | missing | missing | missing | missing | missing |
|  |  | **7** | 4.1 | 0.17 | 5.5 | 892 | 10237.3 |
|  |  | **8** | missing | missing | 5.5 | 854 | 4951.8 |
|  |  | **Average** | **3.4** | **0.2156** | **5.50** | **936.29** | **9403.0** |
|  |  | **STD** | **0.82** | **0.0595** | **0.00** | **51.80** | **3080.3** |
|  |  | **P-value** | **0.045** | **0.013** | **0.026** | **0.31** | **0.85** |

**Table S6.**  Inhibition of HepG2 Cells by *M. Charantia*

|  |  |
| --- | --- |
| Concentration (µg/mL) | Inhibition % |
| 300 | 21.9 |
| 150 | 5.3 |
| 75 | -3.1 |
| 37.5 | -7.2 |
| 18.8 | -9.3 |
| 9.38 | -10.4 |
| 4.69 | -10.9 |
| 2.34 | -11.2 |
| 1.17 | -11.3 |
| 0 | -11.4 |

**Table S7.**  Inhibition of HepG2 Cells by Rosuvastatin

|  |  |
| --- | --- |
| Concentration (µg/mL) | Inhibition % |
| 300 | 103.2 |
| 150 | 50.1 |
| 75 | 23.5 |
| 37.5 | 10.2 |
| 18.8 | 3.6 |
| 9.38 | 0.25 |
| 4.69 | -1.4 |
| 2.34 | -2.2 |
| 1.17 | -2.7 |
| 0 | -3.1 |

**Table S8.** Inhibition of HepG2 Cells by Rosuvastatin + *M. Charantia*

|  |  |
| --- | --- |
| Concentration (µg/mL) | Inhibition % |
| 150 | 135.9 |
| 75 | 61.6 |
| 37.5 | 24.5 |
| 18.8 | 5.9 |
| 9.38 | -3.3 |
| 4.69 | -8.0 |
| 2.34 | -10.3 |
| 1.17 | -11.5 |
| 0.59 | -12.0 |