

Figure S1: TGA of physical mixture CAF:DAP(1:1) (A); cocrystal obtained by LAG CAF:DAP(1:1) using acetone (B), using ethanol (C) and using ethyl acetate(D); cocrystal obtained by spray drying CAF:DAP(1:1) using acetone (E), using ethanol (F) and using ethyl acetate (G).



Figure S2: FTIR spectra of physical mixture CAF:DAP(1:1) (A), cocrystal obtained by milling LAG CAF:DAP(1:1) using acetone (B), using ethanol (C) and using ethyl acetate(D). Cocrystal obtained spray drying CAF:DAP(1:1) using acetone (E), using ethanol (F) and using ethyl acetate (G).

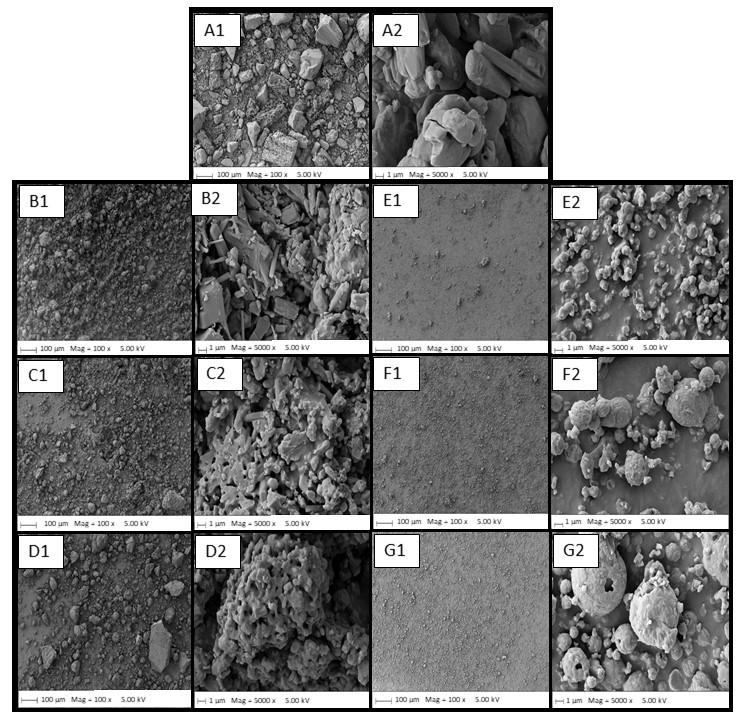


Figure S3: SEM of physical mixture CAF:DAP(1:1) (A1 and A2); cocrystal obtained by LAG CAF:DAP(1:1) using acetone (B1 and B2), using ethanol (C1 and C2) and using ethyl acetate(D1 and D2); cocrystal obtained by spray drying CAF:DAP(1:1) using acetone (E1 and E2), using ethanol (F1 and F2) and using ethyl acetate (G1 and G2). Magnification 1 = 100 X and 2 = 5.0K X

Table S1: Melting point and enthalpy energy obtained by DSC analysis (=3)

|  |  |  |
| --- | --- | --- |
| **Sample** | **Temperature (oC)** | **Enthalpy (J/g)** |
| CAF | 161.1±0.6 | 18.6±0.6 |
| 237.8±0.5 | 108.0±1.1 |
| DAP | 83.3±0.0 | 7.5±0.1 |
| 179.3±0.1 | 88.3±0.3 |
| CAF/DAP(1:1) physical mixture | 83.4±0.3 | 3.3±0.5 |
| 139.1±0.1 | 0.2±0.0 |
| 162.0±0.6 | 36.6±3.5 |
| 176.2±0.2 | 20.4±4.5 |
| CAF/DAP(1:1)\_SlowEvap\_Acetone | 158.0±1.3 | 2.4±2.0 |
| 176.9±0.1 | 67.4±23.8 |
| CAF/DAP(1:1)\_LAG 15\_Acetone | 176.8±0.2 | 102.5±1.7 |
| CAF/DAP(1:1)\_LAG 30\_Acetone | 176.7±0.1 | 103.01.5 |
| CAF/DAP(1:1)\_LAG 45\_Acetone | 176.4±0.0 | 104.4±0.9 |
| CAF/DAP(1:1)\_SPRAY\_Acetone | 175.6±0.1 | 98.9±0.2 |
| CAF/DAP(1:1)\_LAG 30\_ethanol | 176.4±0.3 | 104.2±0.6 |
| CAF/DAP(1:1)\_SPRAY\_EtOH | 176.3±0.2 | 99.8±1.9 |
| CAF/DAP(1:1)\_SLOW Evap\_eEthylAcet | 83.2±0.0 | 0.8±0.6 |
| 132.8±0.6 | 4.0±0.6 |
| 159.5±0.2 | 5.1±1.1 |
| 177.0±0.1 | 105.9±17.5 |
| CAF/DAP(1:1)\_LAG 30\_Ethyl acetate | 176.6±0.1 | 104.3±0.4 |
| CAF/DAP(1:1)\_SPRAY\_EthylAcet | 175.7±0.1 | 96.5±1.6 |

Table S2: Solubility of dapsone (DAP) from cocrystal samples obtained by milling and spray drying

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Samples | Time | | | | |
| 30 min | 1 h | 2 h | 4 h | 24 h |
| Average ± SD  (µg/mL) | Average ± SD  (µg/mL) | Average ± SD  (µg/mL) | Average ± SD  (µg/mL) | Average ± SD  (µg/mL) |
| **DAP API** | 189.8 ± 8.5 | 188.6 ± 2.6 | 207.9 ± 16.2 | 209.8 ± 7.1\* | 217.1 ± 7.8 |
| CAF/DAP(1:1)\_LAG 30\_Acetone | 415.0 ± 9.4\* | 447.5 ± 15.0\* | 448.6 ± 0.0\* | 448.0 ± 15.7\* | 507.6 ± 32.1\* |
| CAF/DAP(1:1)\_LAG  30\_ Ethanol | 412.5 ± 7.5\* | 447.5 ± 14.3\* | 437.0 ± 12.9\* | 449.9 ± 19.3\* | 501.5 ± 13.1\* |
| CAF/DAP(1:1)\_LAG  30\_ Ethyl acet. | 395.2 ± 9.5\* | 448.6 ± 26.7\* | 435.1 ± 14.2\* | 455.8 ± 12.4\* | 526.4 ± 20.6\* |
| CAF/DAP(1:1)\_SPRAY\_  Acetone | 401.0 ± 15.7\* | 430.7 ± 15.7\* | 422.6 ± 13.7\* | 445.9 ± 18.8\* | 506.5 ± 31.0\* |
| CAF/DAP(1:1)\_SPRAY\_  Ethanol | 425.8 ± 13.5\* | 442.1 ± 9.4\* | 440.8 ± 8.4\* | 459.9 ± 12.3\* | 512.9 ± 17.5\* |
| CAF/DAP(1:1)\_SPRAY\_  Ethyl acet. | 414.5 ± 14.2\* | 428.5 ± 4.4\* | 434.5 ± 2.5\* | 445.9 ± 4.2\* | 512.3 ± 32.7\* |

\*(P <0.05) compared with DAP API