Electronic Supplementary Material (ESI) for Reaction Chemistry & Engineering.

Supporting Information

Combining batch and continuous flow setups in the end-to-end synthesis of naturally occurring curcuminoids

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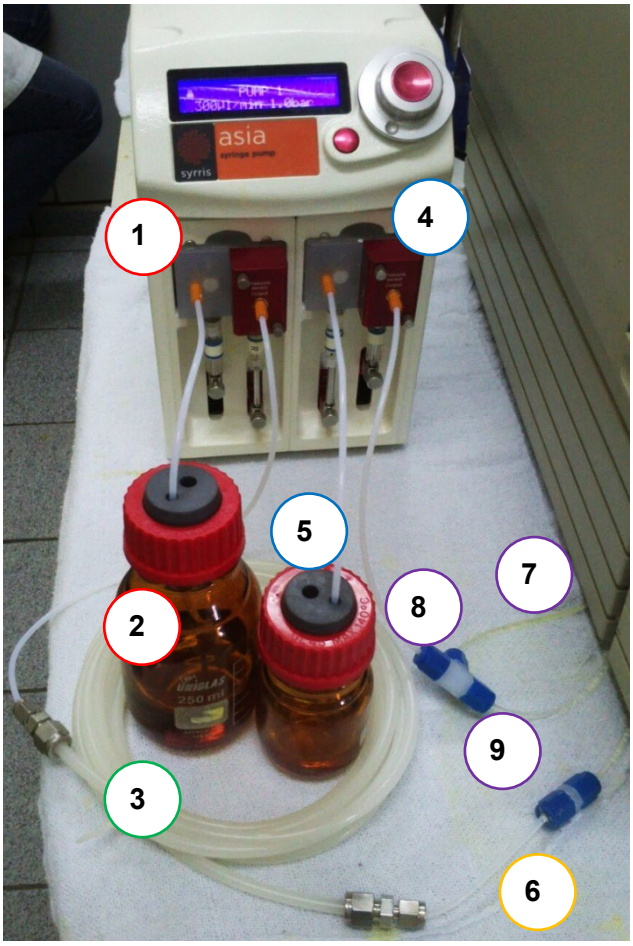
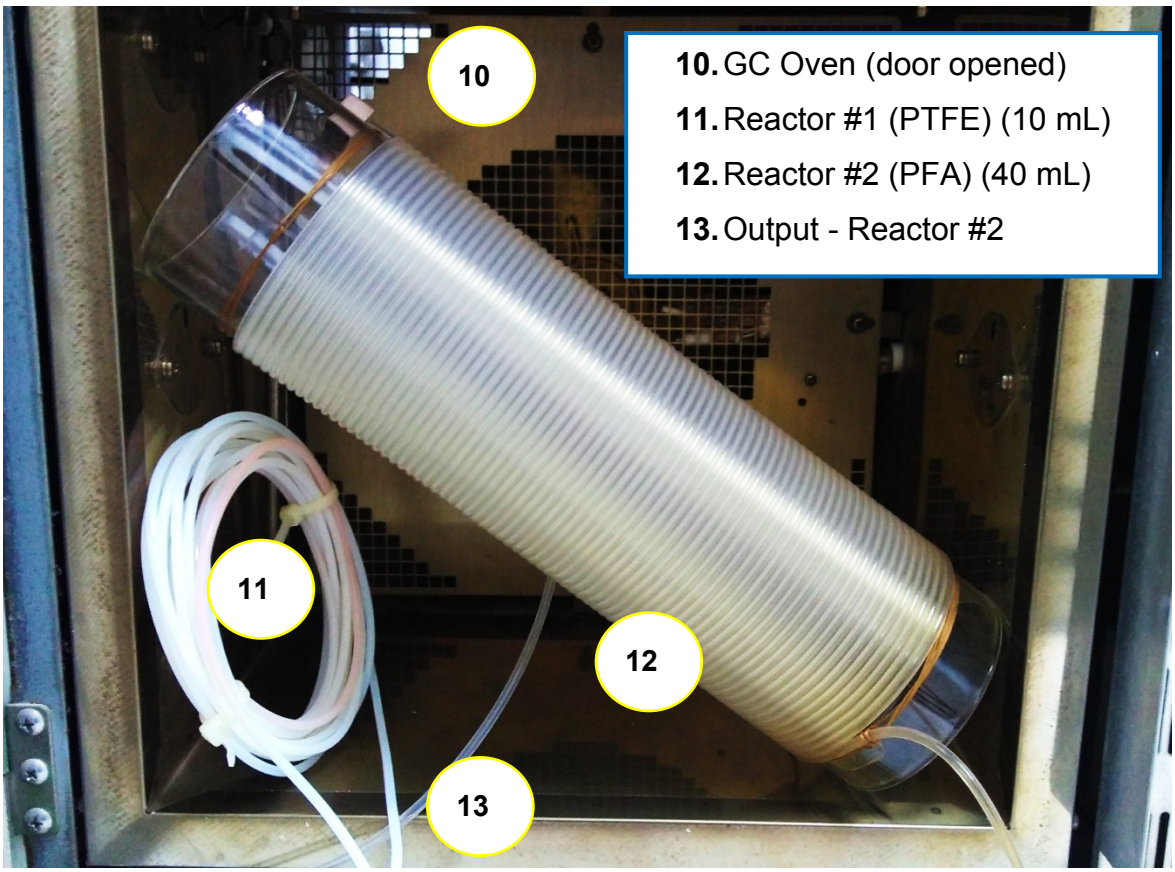


1. Pump 1
2. Ethyl acetate
3. PFA loop containing acetylacetone, boron anhydride, vanillin, tributyl borate and ethyl acetate.
4. Pump 2
5. *n*-butylamine in ethyl acetate
6. Input – Reactor #1
7. Output– Reactor 1
8. Mixer (T-piece)
9. Input – Reactor # 2



10. GC Oven (door opened)
11. Reactor #1 (PTFE) (10 mL)
12. Reactor #2 (PFA) (40 mL)
13. Output - Reactor #2

Figure S1. (Top). Asia Syringe Pump with the PTFE loop module. (Bottom) PFA Flow Reactors **1** and **2** inside the GC oven.

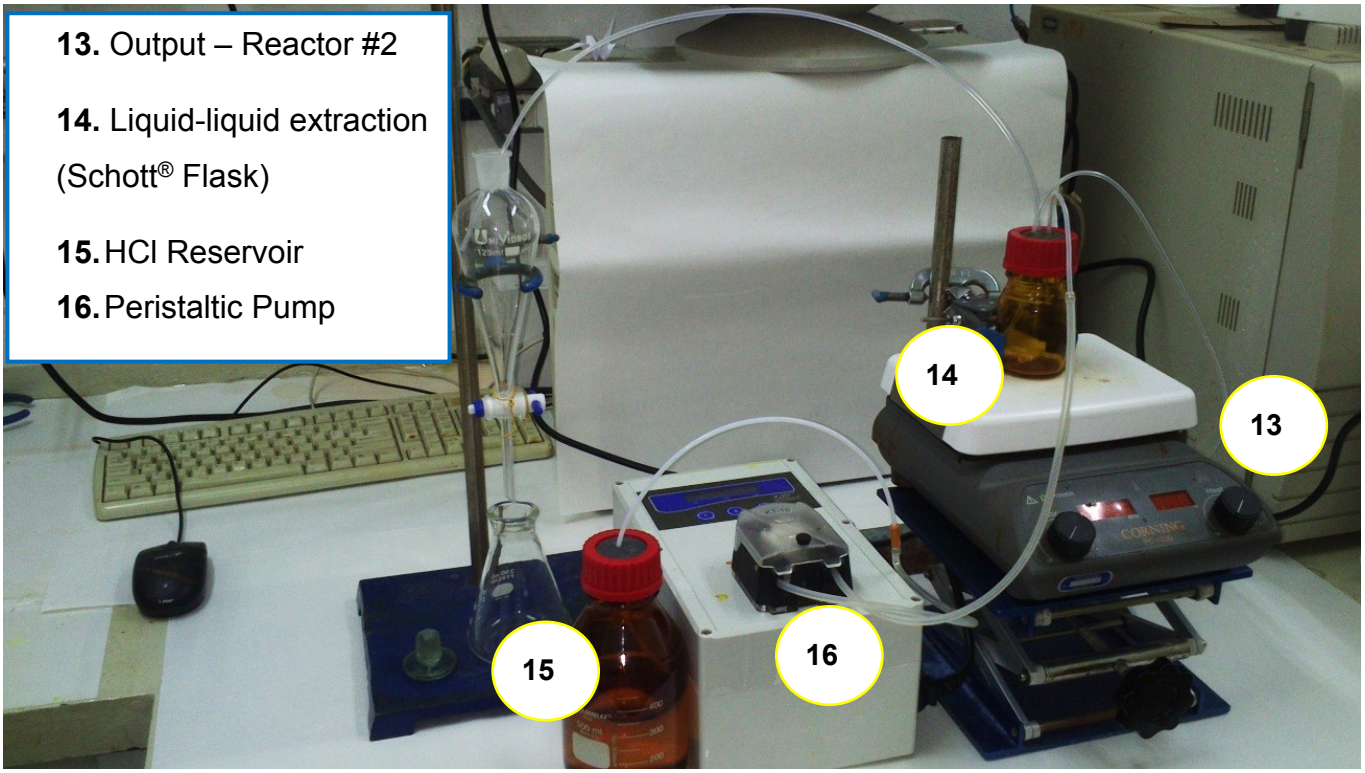


Figure S2. (Top). Backpressure regulator of 2.7 bar at the exit of the Flow Reactor #2. (Bottom) Flow setup for liquid-liquid extraction using the Schott® Flask.

Figure S3. (Top). Overview of the setup. (Bottom) Curcumin (**1**) obtained on a 7.50 g scale (63% yield) after 7h of process intensification.

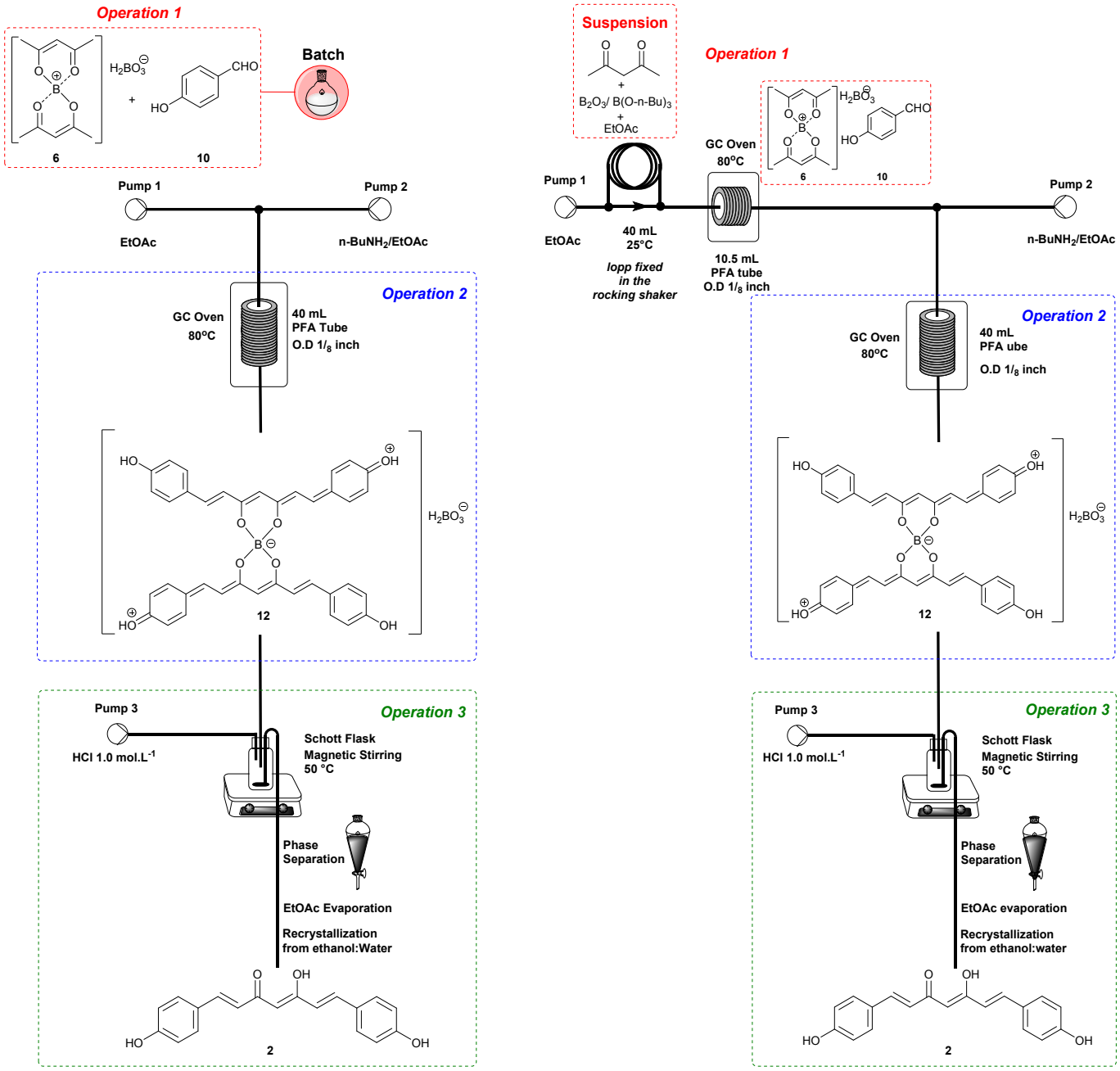


Figure S4. Flow setup for the synthesis of *bis*-demethoxycurcumin (**2**). (Left) Combined batch and continuous flow protocols. (Right) End-to-end continuous method.

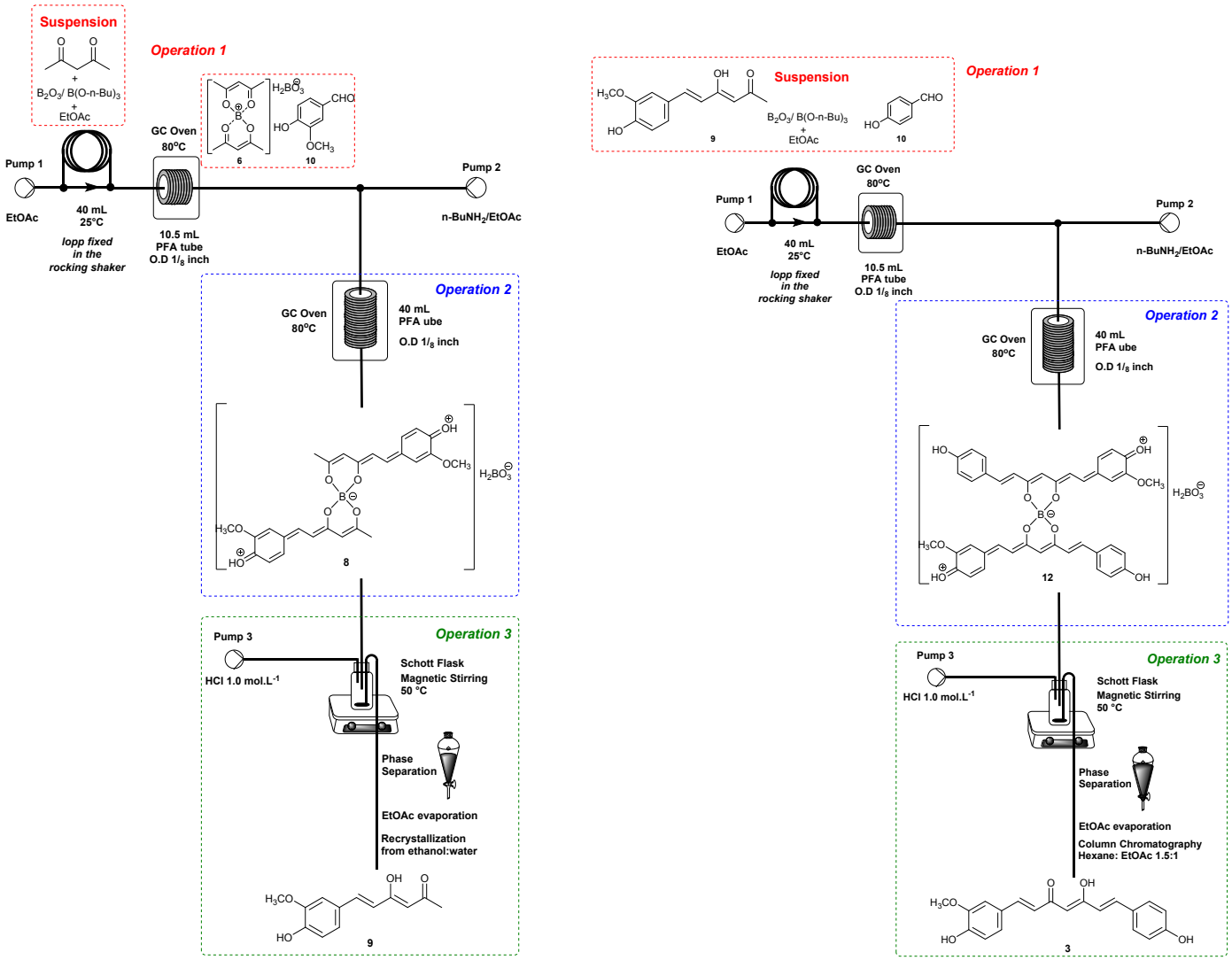


Figure S5: End-to-end synthesis of intermediate **9** (Left) and curcuminoid **3** (Right).

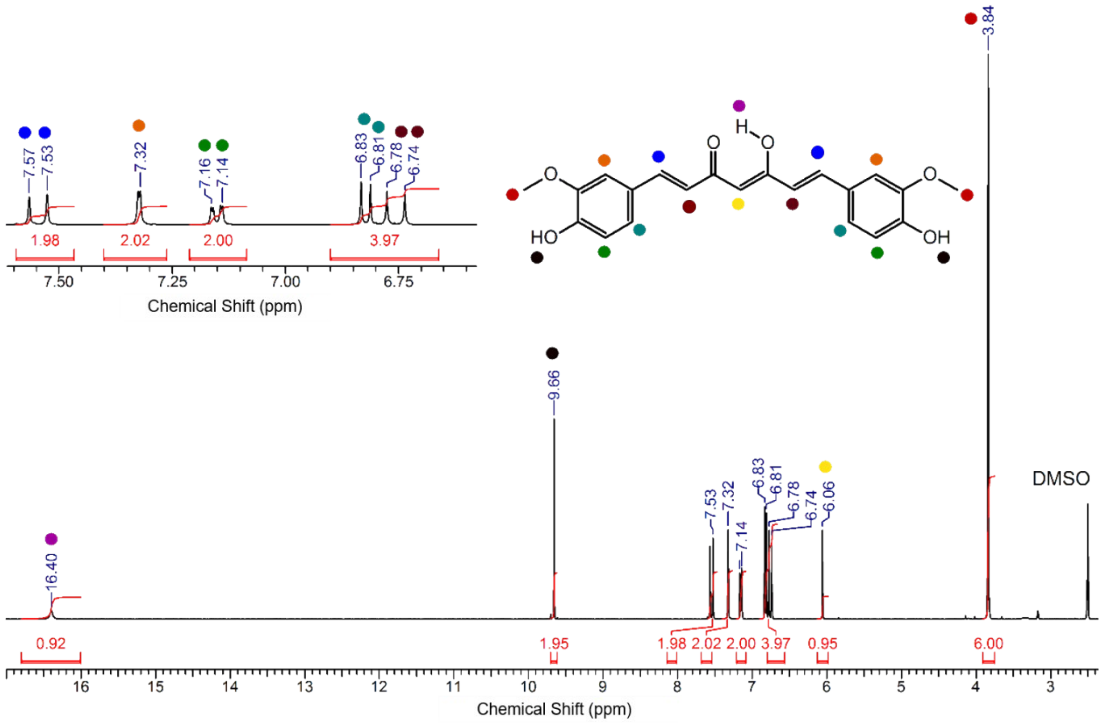


Figure S6. ^{1}H NMR (400 MHz) of curcumin (**1**) in DMSO-d_6

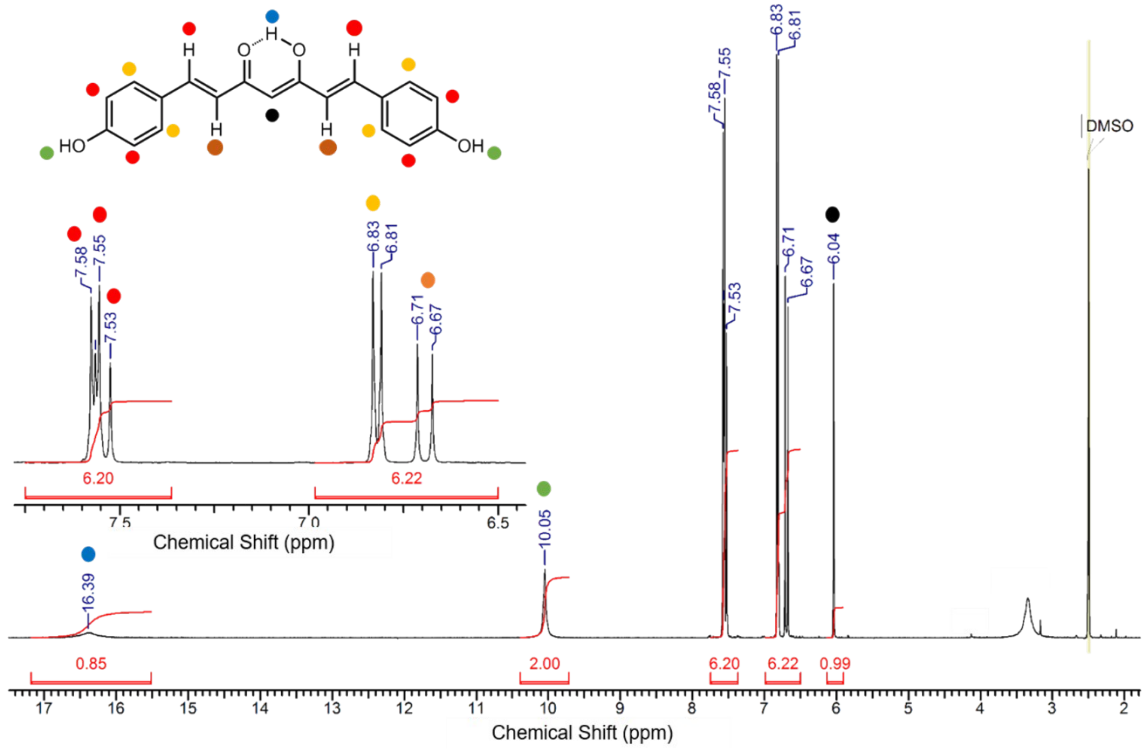


Figure S7. ^{1}H NMR (400 MHz) of *bis*-demethoxycurcumin (**2**) in DMSO-d_6

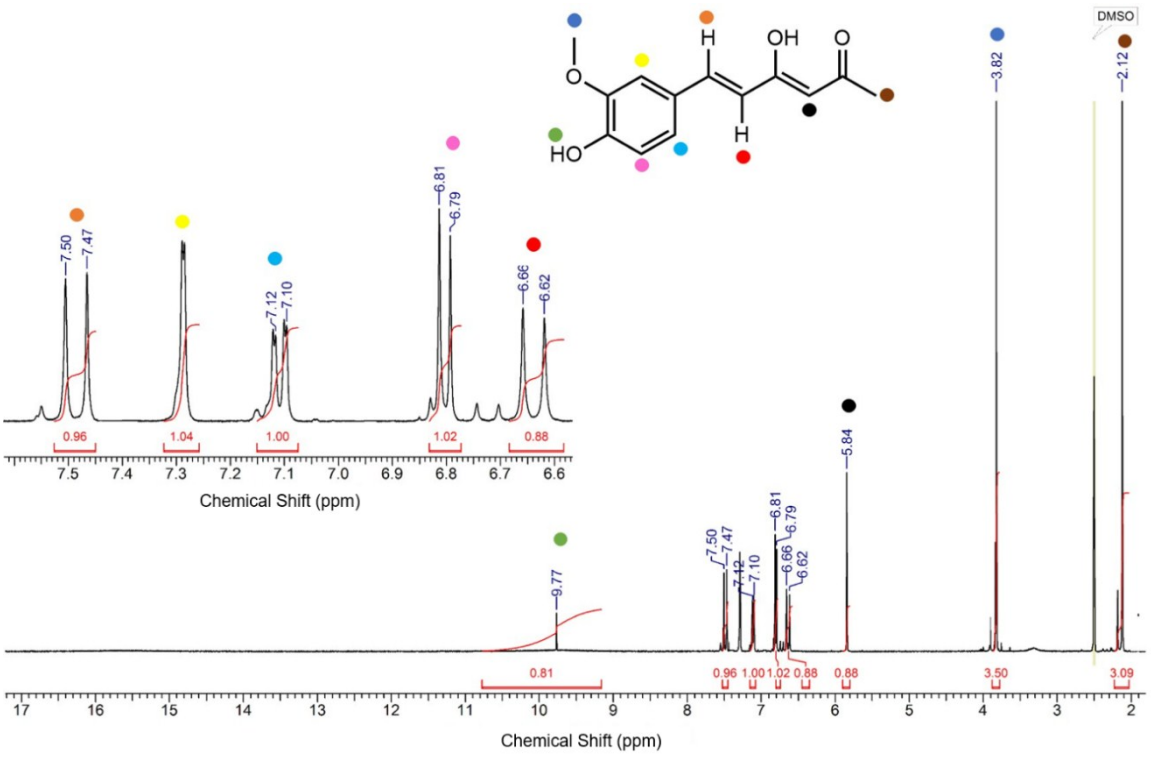


Figure S8. ^{1}H NMR (400 MHz) of diketone **9** in DMSO-d_6

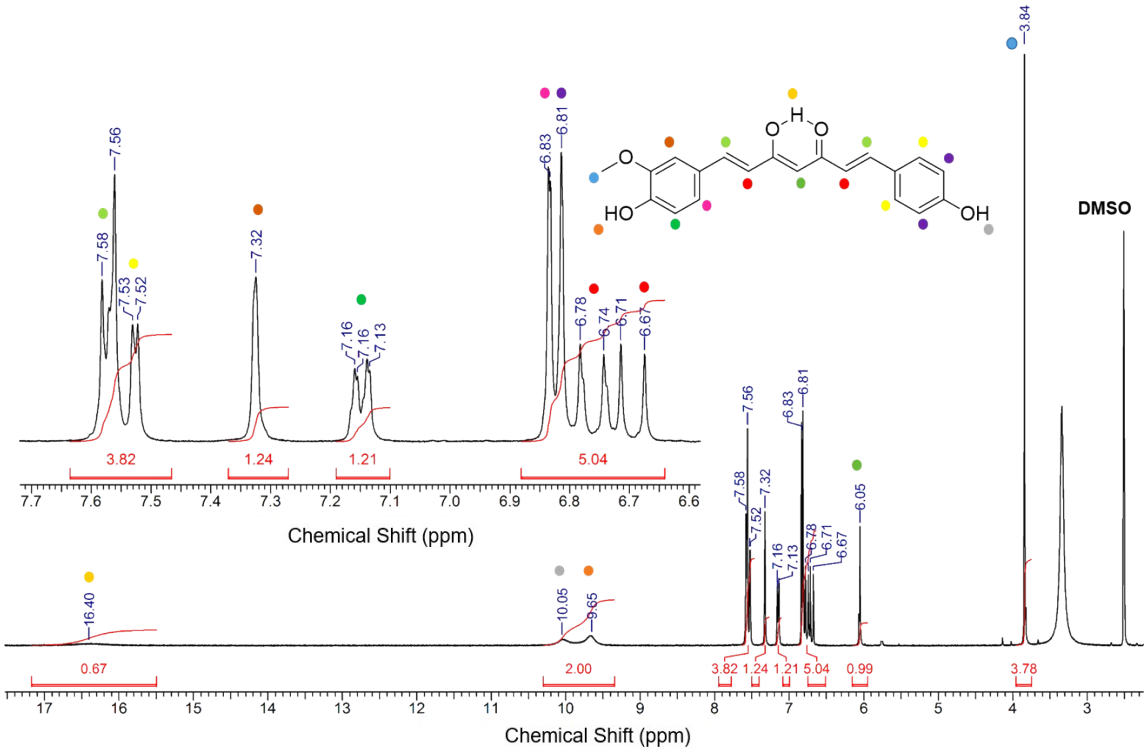


Figure S9. ^{1}H NMR (400 MHz) of demethoxycurcumin (**3**) in DMSO-d_6