

Development of a flow process for an easy and fast access to 2-pyrone derivatives

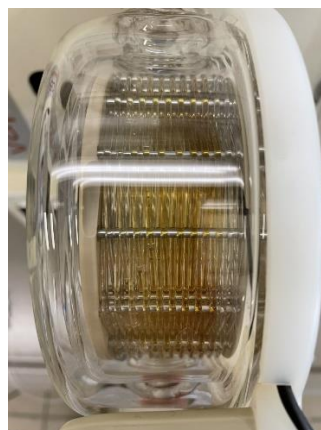
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Electronic Supplementary Information

Continuous flow reaction's details

The continuous flow reactions were performed using an E-Series Integrated Flow Chemistry system from Vapourtec (Alfatech s.p.a., Genoa, Italy) equipped with a 10 mL PFA coiled tubular reactor (1.0 mm i.d. × 12.75 m length). The coil reactor was kept under controlled pressure using back pressure regulators (BPR) from IDEX Health & Science L.L.C. (Microcolumn s.r.l., Desio, Italy).



The reactor used in the research

Spectra of isolated compounds

The ^1H -NMR was recorded on a Bruker AV 400 MHz instrument, equipped with a 5 mm multinuclear probe, and 32 scans were acquired with an acquiring time of 3 seconds for each spectrum. The chemical shifts are referred to the signal of the solvent residual peak (^1H : $\text{CDCl}_3 = 7.26$ ppm, $\text{DMSO-d}_6 = 2.5$ ppm, $\text{D}_2\text{O} = 4.79$ ppm; ^{13}C : $\text{CDCl}_3 = 77.36$ ppm, $\text{DMSO-d}_6 = 40.45$ ppm; *J. Org. Chem.* **1997**, *62*, 7512-7515)

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- **Figure S1:** $^1\text{H-NMR}$ (400 MHz, DMSO- d_6) of pyrone **2** sodium salt
- **Figure S2:** $^{13}\text{C-NMR}$ (100.6 MHz, DMSO- d_6) of pyrone **2** sodium salt
- **Figure S3:** $^1\text{H-NMR}$ (400 MHz, CDCl_3) of 3-hydroxy-2-pyrone (**3**)
- **Figure S4:** $^{13}\text{C-NMR}$ (100.6 MHz, CDCl_3) of 3-hydroxy-2-pyrone (**3**)
- **Figure S5:** $^1\text{H-NMR}$ (400 MHz, D_2O) of 3-hydroxy-2-pyrone (**3**)

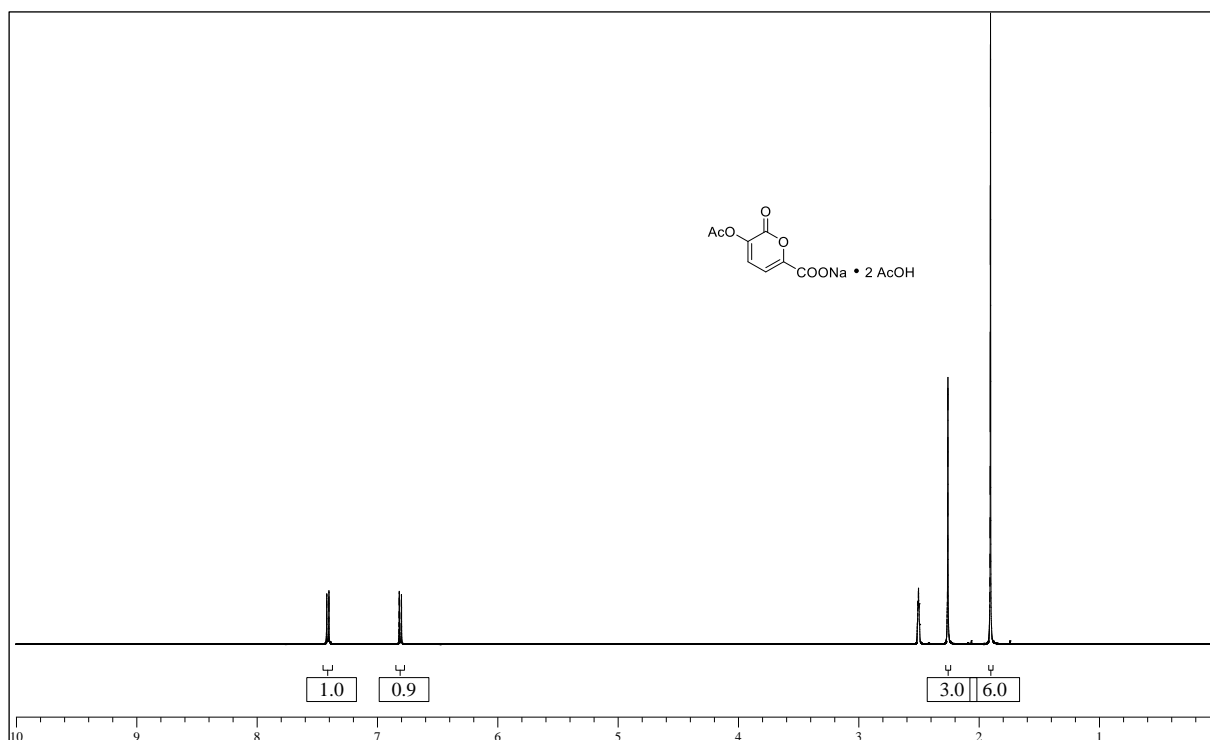


Figure S1: $^1\text{H-NMR}$ (400 MHz, DMSO- d_6) of pyrone **2** sodium salt

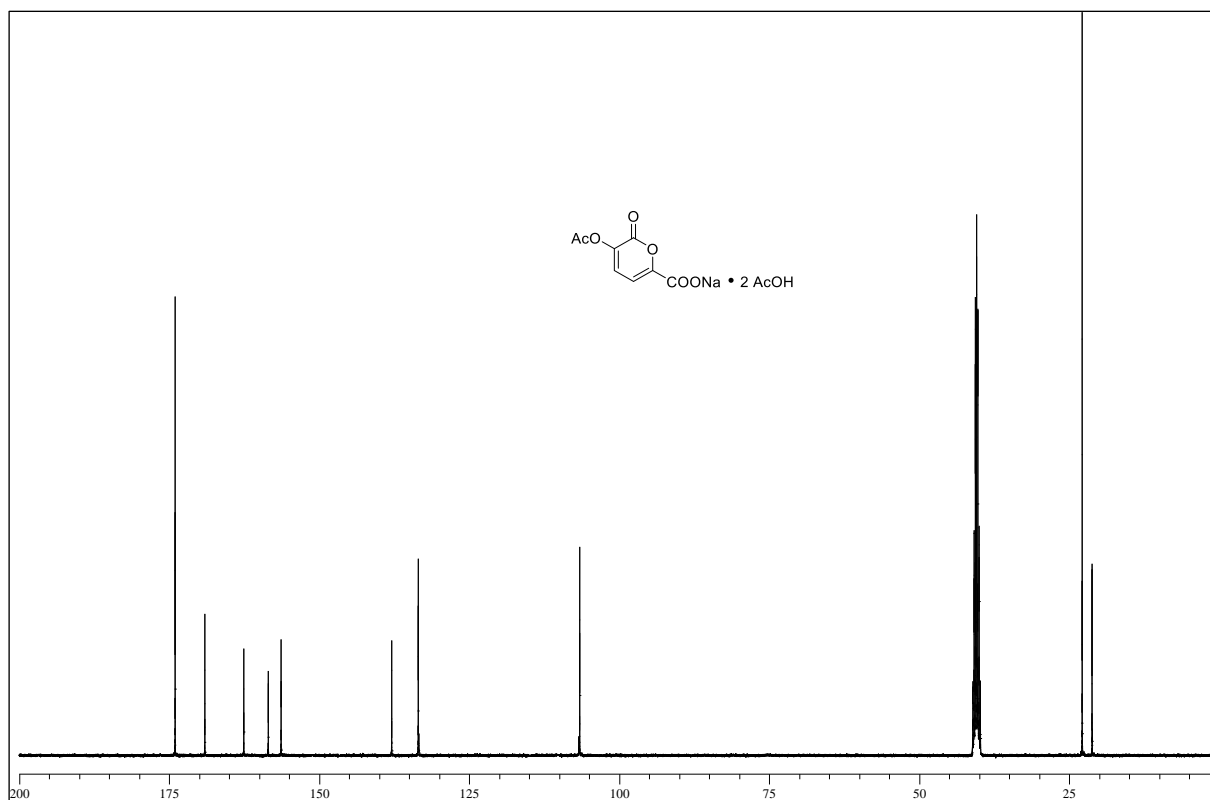


Figure S2: ¹³C-NMR (100.6 MHz, DMSO-d₆) of pyrone **2** sodium salt

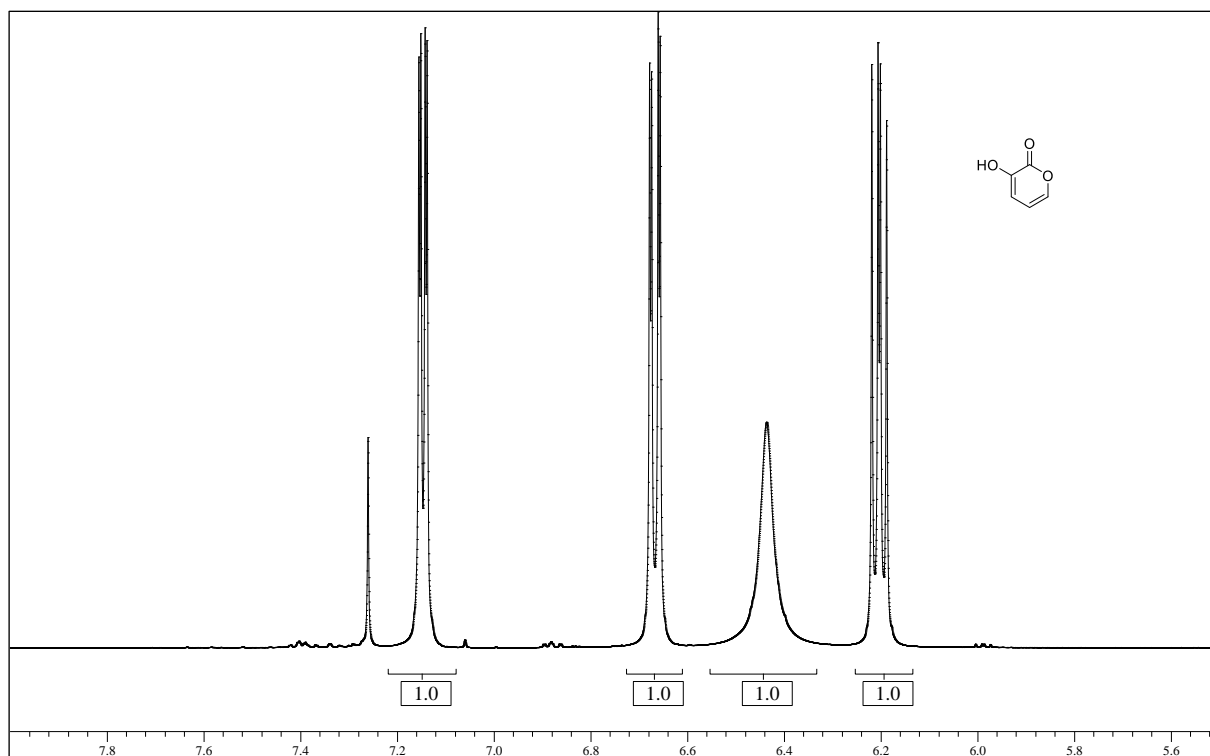


Figure S3: ¹H-NMR (400 MHz, CDCl₃) of 3-hydroxy-2-pyrone (**3**)

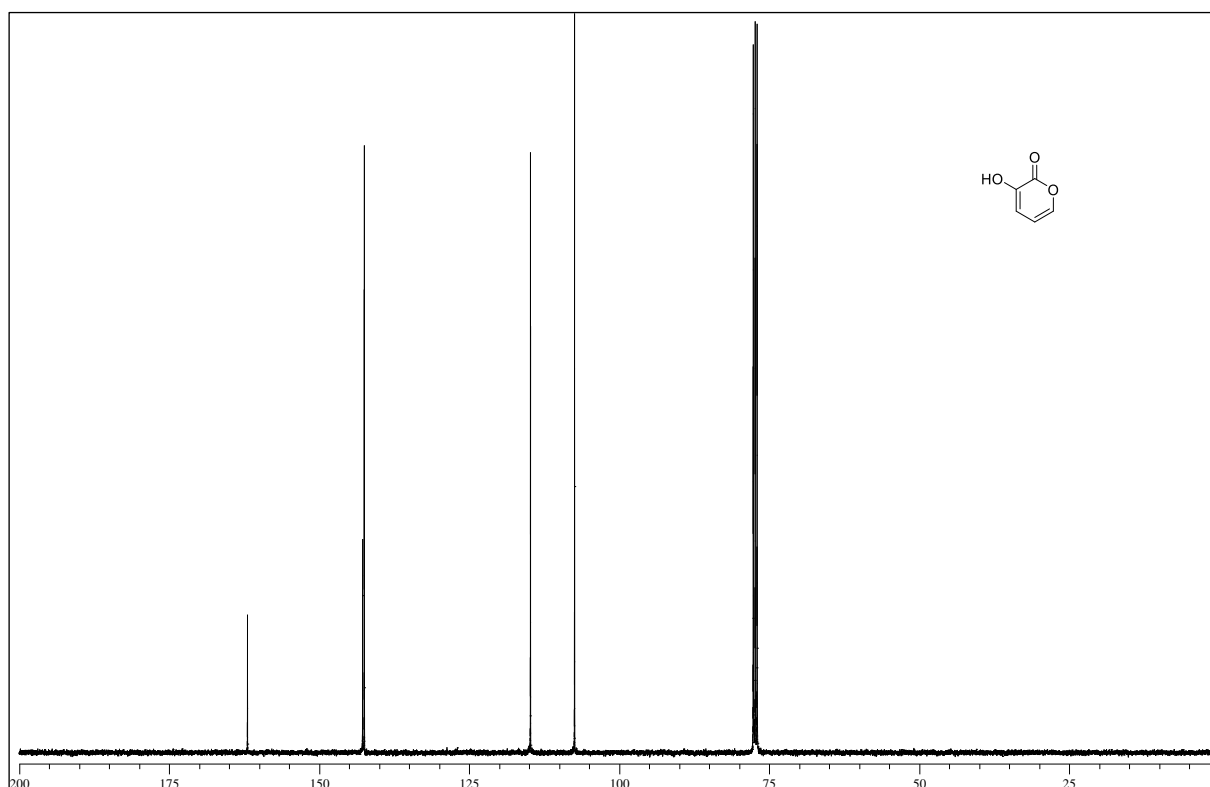


Figure S4: ^{13}C -NMR (100.6 MHz, CDCl_3) of 3-hydroxy-2-pyrone (**3**)

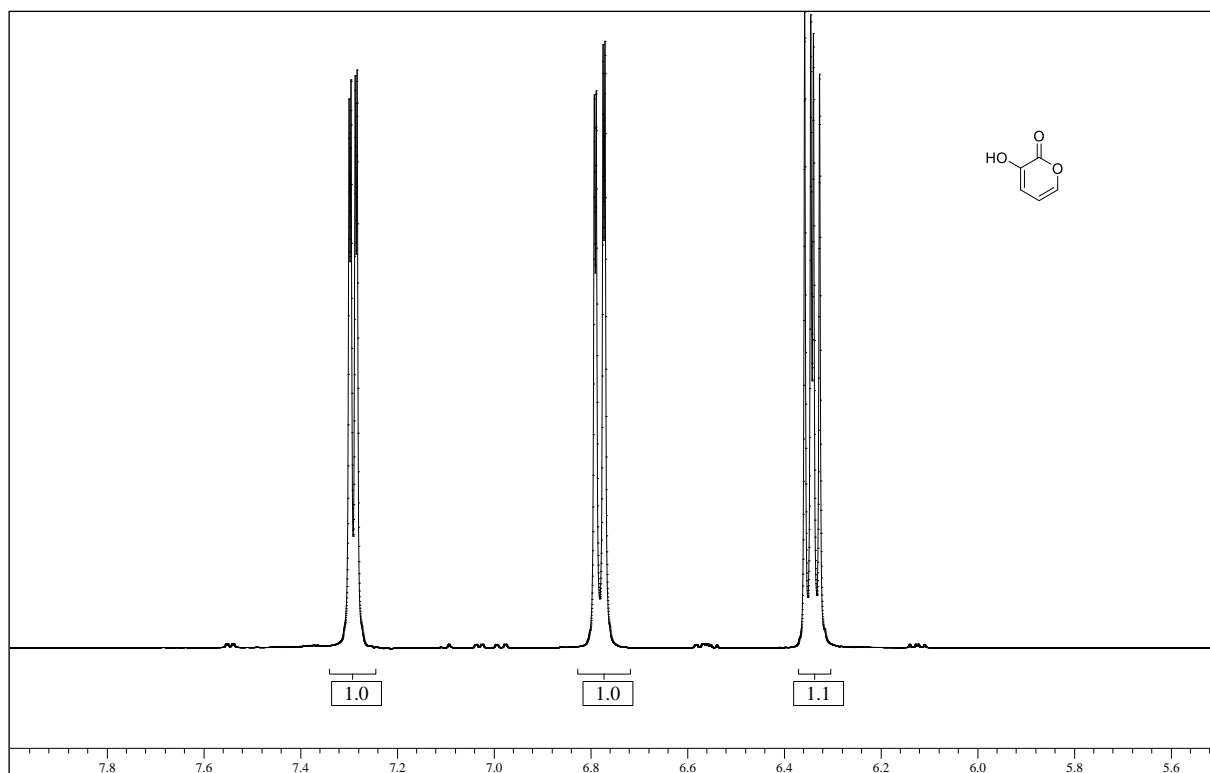


Figure S5: ^1H -NMR (400 MHz, D_2O) of 3-hydroxy-2-pyrone (**3**)