Supplementary Information

Efficient, Facile and Green Synthesis of Ruthenium Carboxylate Complexes by manual grinding

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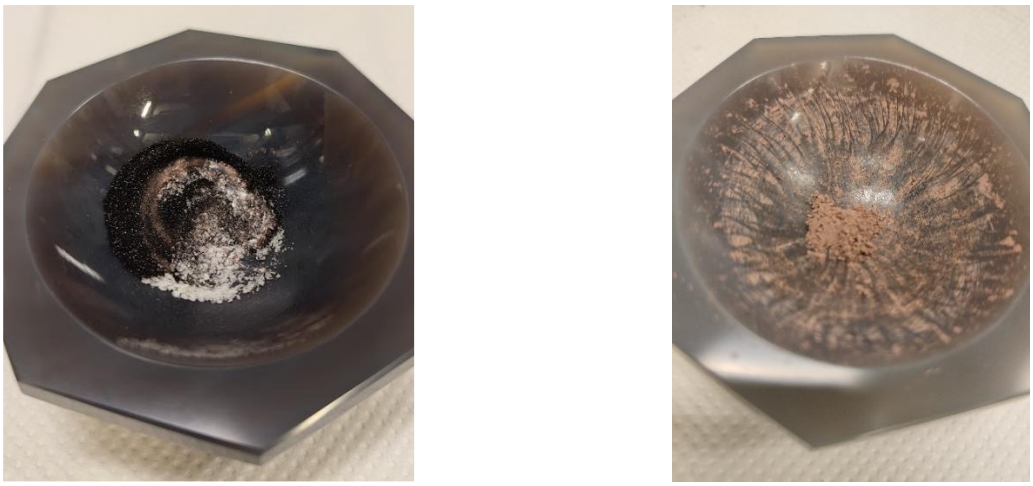


Figure S1. $[RuCl_2(PPh_3)_3]$ + NaOAc before (left) and after (right) the milling process.

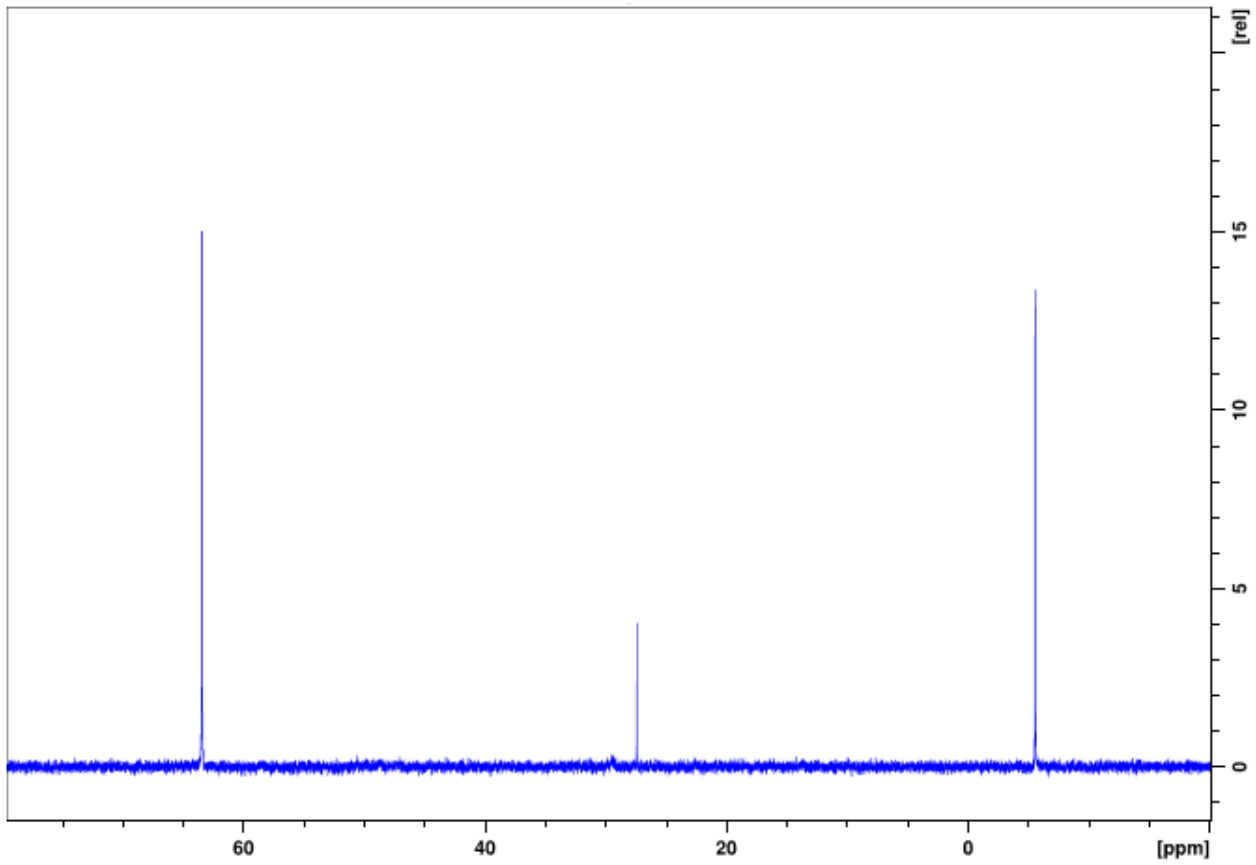


Figure S2. ^{31}P NMR Spectra of of $[Ru(OAc)_2(PPh_3)_2]$: (CD_2Cl_2, 20 °C): $^{31}P\{^1H\}$: δ = 63.5 (s; $[Ru(OAc)_2(PPh_3)_2]$; 27,3 (s, PPH_3O); -5,4 (s, PPH_3).

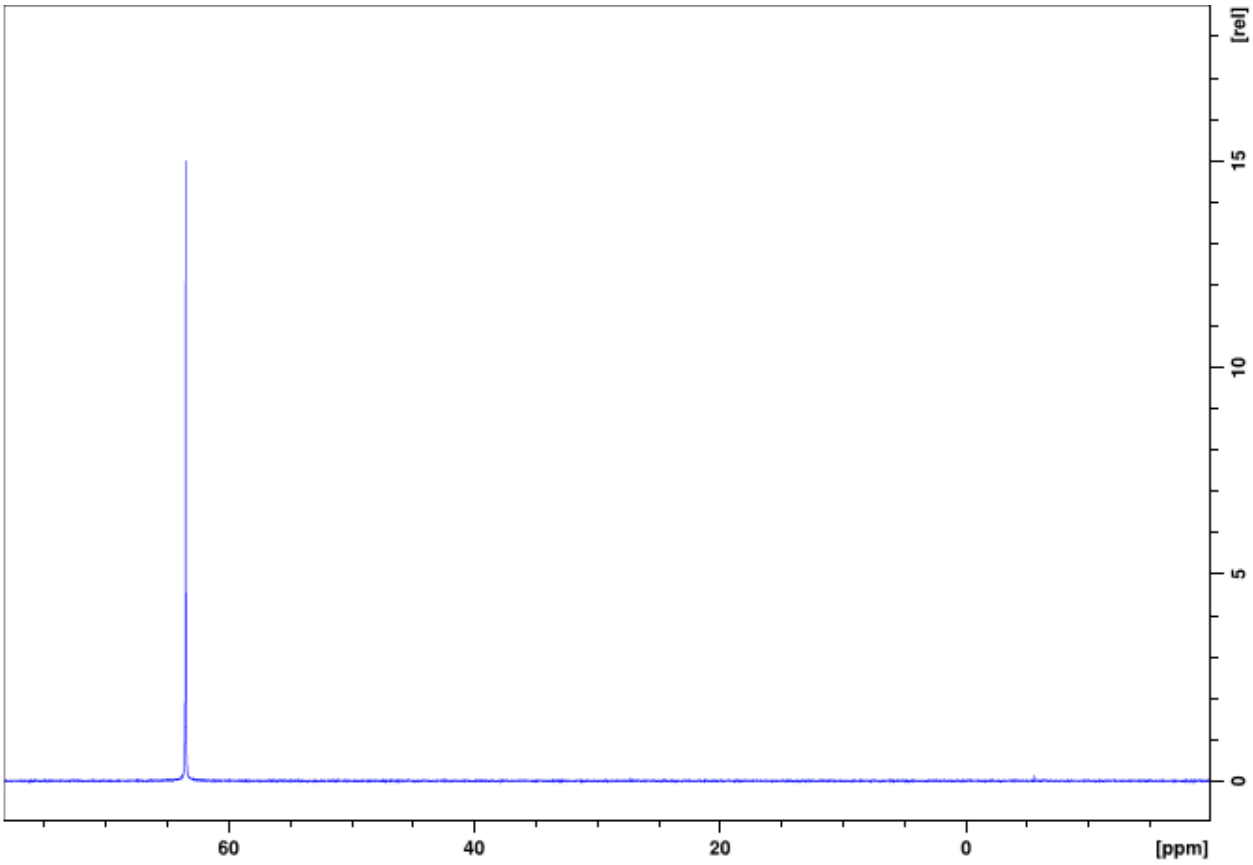


Figure S3. ^{31}P NMR Spectra of of $[Ru(OAc)_2(PPh_3)_2]$ after work-up: (CD_2Cl_2, 20 °C): $^{31}P\{^1H\}$: δ = 63.5 (s; $[Ru(OAc)_2(PPh_3)_2]$.

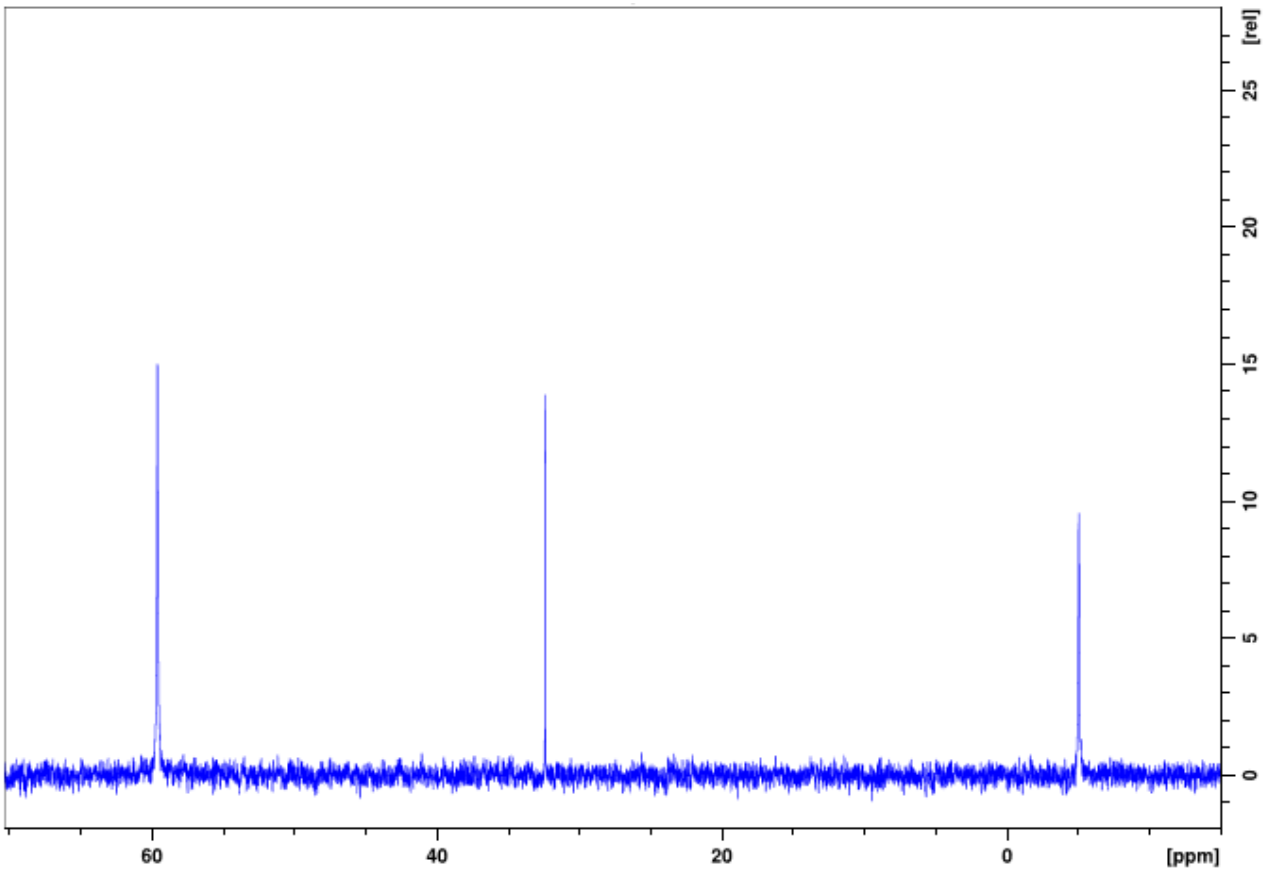


Figure S4. ^{31}P NMR Spectra of $[Ru(OCOR)_2(PPh_3)_2]$ with R= benzoate (CD_3OD, 20 °C): $^{31}P\{^1H\}$: δ = 59.6 (s, $[Ru(OCOR)_2(PPh_3)_2]$); 32,5 (s, PPH_3O); -5,7 (s, PPH_3).

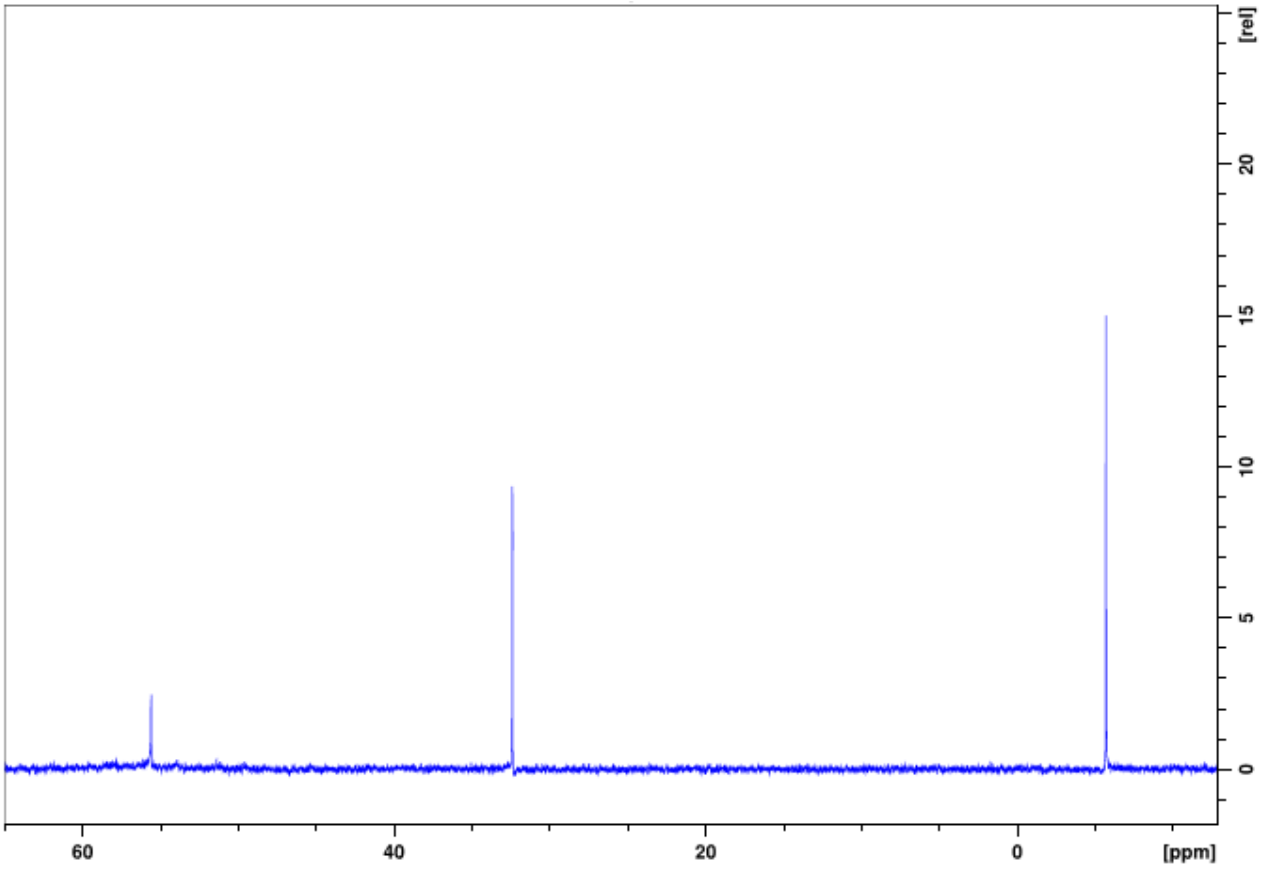


Figure S5. ^{31}P NMR Spectra of $[Ru(OCOR)_2(PPh_3)_2]$ with R= pyruvate (CD_3OD, 20 °C): $^{31}P\{^1H\}$: δ = 55.7 (s, $[Ru(OCOR)_2(PPh_3)_2]$; 32,5 (s, PPH_3O); -5,7 (s, PPH_3).

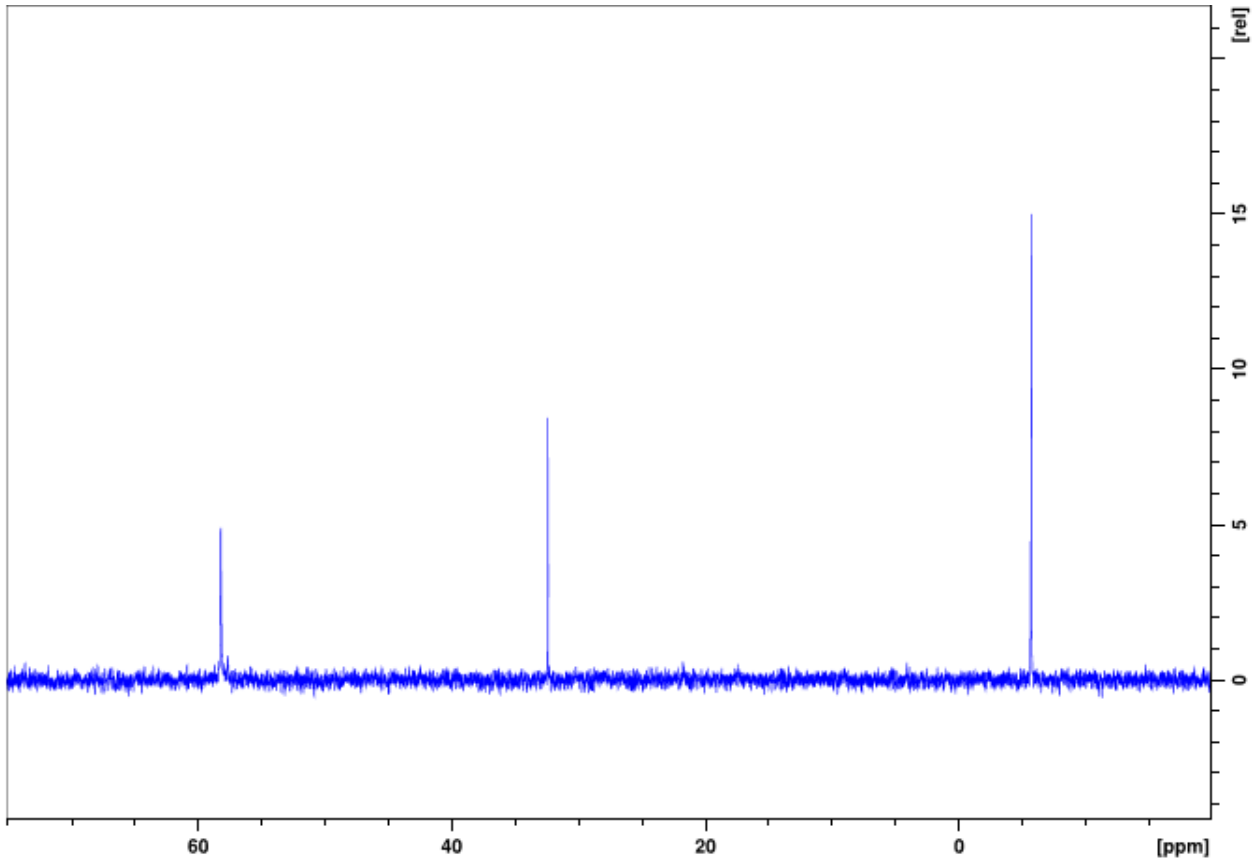


Figure S6. NMR Spectra of $[Ru(OCOR)_2(PPh_3)_2]$ with R= phenylglyoxylate (CD_3OD, 20 °C): $^{31}P\{^1H\}$: δ = 58.3 (s, $[Ru(OCOR)_2(PPh_3)_2]$), 32,5 (s, PPH_3O); -5,7 (s, PPH_3).