Supporting information for:

A new method for the nitrosation of 1,3-diketones applied to 3-ethyl- and 3-methyl pentane-2,4-dione

Emilia Iglesias

Departamento de Química Física e E. Q. I. Facultad de Ciencias. Universidad de La Coruña. 15071-La Coruña, SPAIN. E-mail: emilia.iglesias@udc.es

This supporting information contains:

i) Spectra of enol tautomerization in water and in aqueous perchloric acid of 3-ethylpentane-2,4-dione, EPD, (Fig. S1 (a) to (c)) and of enol tautomerization of 3-methylpentane-2,4-dionem MPD, in aqueous perchloric acid (Fig. S1 (d).

ii) Reaction spectra of alkaline hydrolysis for EPD and MPD, Fig. S2.

iii) The Beer’s law behaviour of EPD diluted in aqueous acid medium or in aqueous alkaline medium and immediately made acid, Fig. S3.

iv) Reaction spectra for the nitrosation of EPD and MPD in acid medium, Fig. S4 (a) and (b).
Figure S1. (a) Decreasing absorbance due to enol tautomerization of 3-ethylpentane-2,4-dione (0.41 mM) in water; scans at 3 min; (b) the lowest down spectrum of (a) after adding 50 µL HClO₄ 1 M; scans at 3 min interval; (c) decreasing absorbance due tautomerization of 3-ethylpentane-2,4-dione (0.41 mM) in aqueous perchloric acid 0.033 M; scans each 3 min interval. EPD added from the stock dioxane solution. (d) Enol tautomerization of 3-methylpentane-2,4-dione (MPD) 0.113 M at [H⁺]=0.034 M; scans each 1.5 min.
**Fig. S2.** (a) Reaction spectrum due to alkaline hydrolysis of [EPD]=0.205 mM in aqueous alkaline medium at [OH\(^-\)]=0.033 M; scans at 3 min interval; (b) alkaline hydrolysis of [MPD]=0.113 mM; [OH\(^-\)]=5.0 mM; I=0.2 M, scans each 1.2 min.

**Fig. S3.** Absorbance increase as a function of 3-ethylpentane-2,4-dione, EPD, when the ketone dioxane stock solution was diluted (●) in aqueous acid medium of HClO\(_4\) 0.11 M and (●) in aqueous alkaline medium 0.032 M and immediately made acid, [H\(^+\)]=0.078 M (HClO\(_4\)).
**Fig. S4.** (a) spectrum of enol of MPD 0.113 mM at [H⁺]=0.034 M; (△) spectrum of HNO₂ 1.13 mM at [H⁺]=0.034 M; scans 3 to 8 correspond to the reaction spectra of [MPD]=0.113 mM; [nit]=1.13 mM and [H⁺]=0.034 M; scans each 1.5 min. (b) spectrum of the enol of EPD 0.103 mM at [H⁺]=0.030 M; scans 1 to 7 correspond to the reaction spectra of [EPD]=0.103 mM; [nit]=1.75 mM and [H⁺]=0.030 M; scans each 2 min.