Vongluanngam, I., Blackman, J. W., Schmidtke, L. M., Wilkinson, K. L., Zhang, X., & Clark, A. C. (2026). Photodegradation of riboflavin in white wine: impact of contrasting light sources and ethanol contents. *OENO One*, *60*(1).
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SUPPLEMENTARY DATA

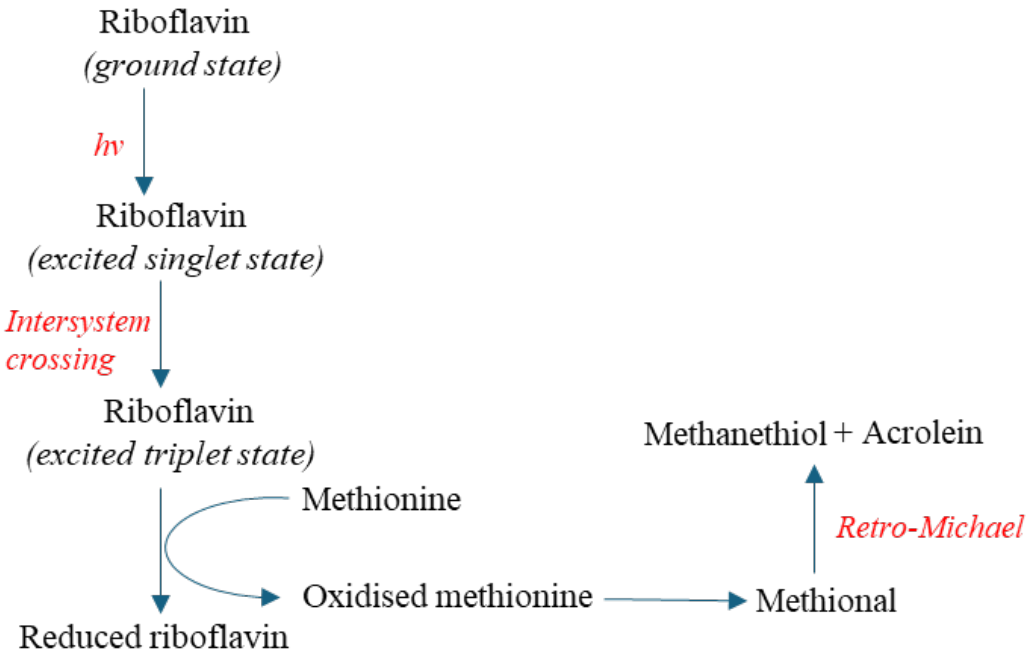


Figure S1. Photodegradation of riboflavin in model wine solution under low oxygen conditions (adapted from Cardoso *et al.*, 2012; Maujean & Seguin, 1983).

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Table S1. General specifications of the de-alcoholised Chardonnay wine used in the storage experiment.

Wine	Vintage	Alcohol (% v/v)[1]	pH[2]	Titratable acidity (g/L)[3]	Citric acid (g/L)[4]	Malic acid (g/L)[4]	Lactic acid (g/L)[4]	Glycerol (g/L)[4]	Acetic acid (g/L)[4]	Glucose (g/L)[4]	Fructose (g/L)[4]	Ascorbic acid (mg/L)[5]	Fe (mg/L)[6]	Cu (mg/L)[6]	Riboflavin (mg/L)[7]
Chardonnay	2024	0.4	3.2	7.8	0.5	3.7	0.6	3.0	0.5	24.5	26.6	< LOQ	1.7	0.1	0.06

[1] Measured by Alcolyzer Module (Anton Paar GmbH, Graz, Austria).

[2] Measured by S20 SevenEasy™ pH meter (Mettler Toledo, Port Melbourne, VIC, Australia).

[3] Measured by 888 Titrando automatic titrator (Metrohm, Gladesville, NSW, Australia).

[4] Determined by HPLC (Thermo Fisher Scientific, Scoresby, VIC, Australia) with diode array detector and Aminex HPX-87H cation exchange columns (Bio-Rad Laboratories, South Granville, NSW, Australia), as outlined in Grant-Preece *et al.* (2015).

[5] Determined by 2,6-dichlorophenolindophenol (2,6-DCPIP) colorimetric titration method; limit of quantification (LOQ) is 5 mg/L, as described in Iland *et al.* (2000).

[6] Determined by an Inductively Coupled Plasma Optical Emission Spectrometry (Agilent Technologies, Mulgrave, VIC, Australia), as described by Kontoudakis *et al.* (2020).

[7] Determined by UPLC (Waters, Milford, USA) coupled to a photodiode array detector, using a Waters Acquity BEH C18 column, as described in Dias *et al.* (2012).

Table S2. Concentrations of free and total SO_2 and total phenolic compounds (TPC) in de-alcoholised Chardonnay at bottling and after storage under different light treatments. Values are expressed as means ($n = 3$) ± standard deviation. Asterisks (*) indicate significant differences ($p < 0.05$) between measurements performed before and after experimental treatments, using paired *t*-test.

Treatment	Time (day)	Free SO_2 (mg/L)	Total SO_2 (mg/L)	TPC (a.u.)
Fluorescent + water (F/DA)	0	29 ± 1	150 ± 1	3.30 ± 0.03
	1	29 ± 1	140 ± 1 *	3.14 ± 0.01 *
Cool white LED + water (L/DA)	0	32 ± 2	152 ± 1	3.30 ± 0.02
	1	30 ± 3	141 ± 2 *	3.17 ± 0.03 *
Yellow LED + water (Y/DA)	0	26 ± 1	149 ± 1	3.28 ± 0.01
	14	24 ± 0	141 ± 0 *	3.31 ± 0.01
Dark + water (D/DA)	0	28 ± 3	148 ± 2	3.28 ± 0.01
	14	24 ± 1	140 ± 2 *	3.31 ± 0.03
Fluorescent + ethanol (F/DA+E)	0	27 ± 2	151 ± 0	3.26 ± 0.02
	1	28 ± 2	142 ± 1 *	3.19 ± 0.03 *
Cool white LED + ethanol (L/DA+E)	0	24 ± 1	152 ± 1	3.31 ± 0.02
	1	24 ± 3	142 ± 1 *	3.09 ± 0.04 *
Yellow LED + ethanol (Y/DA+E)	0	24 ± 1	139 ± 1	3.31 ± 0.01
	14	20 ± 2	139 ± 2	3.32 ± 0.03
Dark + ethanol (D/DA+E)	0	22 ± 1	139 ± 2	3.28 ± 0.02
	14	22 ± 2	139 ± 1	3.31 ± 0.01

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