

1 Supplementary Information

2 Chemical and sensorial investigation of in-mouth sensory properties of grape anthocyanins

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Reference	Variety	Area	Vintage	Total Anthocyanins Content				Method	Glucoside	Acetylated	Cinnamoylated
				Grape	Wine				mg/L Month (n)	mg/L Month (n)	mg/L Month (n)
				mg/Kg	mg/L Month (n)	mg/L Month (n)	mg/L Month (n)				
Mazza et al., 1999 (18)	Cabernet Franc	Okanagan Valley	1996	826	420(1)	316 (8)	232 (14)	Spect*	-	-	-
			1997	1048	469(1)	337(8)					
	Merlot	(United States)	1996	981	412(1)	371 (8)	279 (14)				
			1997	1047	455(1)	338(8)					
	Pinot Noir		1996		340(1)	280 (8)	223 (14)				
			1997		219(1)	171(8)					
Gonzales-Neves et al., 2004 (19)	Tannat	Uruguay	2001	1459	551(2)			Spect*	-	-	-
			2002	3632	952(2)						
	Cabernet Sauvignon		2001	1079	349(2)	-	-				
			2002	1939	563(2)						
	Merlot		2001	708	226(2)						
			2002	1516	402(2)						
García-Falcón et al., 2007 (20)	Mencia	Ribeiro (Spain)			205 (End MLF)	129 (3)	57 (12)	HPLC-DAD	156 (end MLF); 98 (3); 40(12)	25 (end FML); 17 (3); 8 (12)	24(end MLF); 14(3); 3(12)
	Brancellao		-	-	66 (End MLF)	53 (3)	10 (12)		60 (end MLF); 48 (3); 5(12)	6 (end FML); 5 (3); 1 (12)	1(end MLF); 0.8(3); n.q.(12)
Perez-Magariño et al., 2004 (21)	Tinto Fino	Ribeira del Duero (Spain)			343 (End AF)			HPLC-DAD	304	16	23
				Different Ripeness	401 (End AF)				358	23	20
					367 (End AF)				322	20	25
	Cabernet Sauvignon		-		561 (End AF)	-	-		375	153	33
				Different Ripeness	576 (End AF)				401	151	24
					593 (End AF)				397	159	37
Ferrandino et al., 2012 (22)	Barbera	Piedmont (Italy)	2006	1220				HPLC-DAD	79.2%	10.1%	10.7%
			2007	1264					78.9%	11.3%	9.8%
	Nebbiolo		2006	668					92.2%	2.5%	5.3%
			2007	828	-	-	-		90.9%	4.5%	4.6%
	Cabernet Sauvignon		2006	1474					67.7%	25.4%	6.9%
			2007	1380					67.3%	24.7%	8.0%
Cagnasso et al., 2008 (23)	Nebbiolo	Piedmont (Italy)	2000	494	184(0.5)			Spect* (Total Anthocyanins)	90.7%	8.7%	0.6%
			2001	428	195(0.5)	-	-		93.6%	5.8%	0.6%
			2000		200(0.5)				93.2%	6.7%	0.1%

			2001		231(0.5)				HPLC-UV (percentages)	92.0%	6.9%	1.1%
			2000		149(0.5)					93.0%	5.7%	1.3%
			2001		168(0.5)					72.9%	24.9%	2.2%
	Barbera		2000	981	454(0.5)					78.8%	21.0%	0.2%
			2001	1131	707(0.5)					81.9%	12.6%	5.5%
			2000		519(0.5)					75.0%	24.7%	0.3%
			2001		547(0.5)					76.7%	19.0%	4.3%
Lingua et al., 2016 (24)	Syrah	San Juan (Argentina)		1709.21	334.65 (End AF)	154.85 (FW)				456.97 (Grapes); 185.48 (End AF); 92.15 (FW)	909.03 (Grapes); 107.42 (End AF); 52.59 (FW)	340.76 (Grapes); 41.75(End AF); 10.05 (FW)
	Merlot		-	757.81	271.68 (End AF)	72.76 (FW)	-	HPLC-DAD-MS		344.17 (Grapes); 171.56 (End AF); 50.87 (FW)	329.95 (Grapes); 76.03 (End AF); 16.49 (FW)	83.22 (Grapes); 24.09 (End AF); 5.39 (FW)
	Cabernet Sauvignon			1025.7	119.79 (End AF)	96.52 (FW)				355.33 (Grapes); 85.06 (End AF); 70.19 (FW)	584.16(Grapes); 25.19 (End AF); 22.36 (FW)	86.05 (Grapes); 9.50 (End AF); 3.97 (FW)
Alcalde Eon et al., 2006 (25)	Tannat	Cerro Chapeu (Uruguay)	2003	nd	762.4 (3) [†]					45.20%	27%	14.10%
	Caladoc		2003	nd	469.1 (3) [†]					42.60%	28.70%	16.40%
	Marselan		2003	nd	445.4 (3) [†]	-	-	HPLC-DAD-MS		40.60%	30.90%	12.30%
	Marzemino		2003	nd	497.1 (3) [†]					33.70%	33.60%	9%
	Chevenasco		2003	nd	214.5 (3) [†]					46.90%	10.30%	8%
García- Marino et al., 2010 (26)	Tempranillo	La Rioja (Spain)	nd	nd	993.63 (1)	608.95(13)	310.61 (27)			794.54(1); 452.27(13); 171.50(27)	163.23(1); 121.04(13); 111.29(27) [‡]	
	Graciano		nd	nd	1217.83 (1)	668.78(13)	380.77 (27)	HPLC-DAD		942.01(1); 485.76(13); 230.37 (27)	239.64(1); 147.39(13); 120.64(27) [‡]	
Fanzone et al., 2012 (27)	Malbec	Mendoza (Argentina)	2010	nd	1044.5 [†] ; 551.2 [§] (End MLF)					405.8 (69.1%)	97.8 (16.7%)	47.6 (8.1%)
	Bonarda		2010	nd	739.8 [†] ; 285.5 [§] (End MLF)			Spect* (Total Pigments)		212.8 (69.2%)	43.9 (14.3%)	28.8 (9.4%)
	Cabernet Sauvignon		2010	nd	681.8 [†] ; 269.6 [§] (End MLF)	-	-	HPLC-DAD-MS (Monomeric Anthocyanins)		182.8 (63.2%)	72.1 (25%)	14.7 (5%)
	Merlot		2010	nd	644.1 [†] ; 273.7 [§] (End MLF)					183.8 (62.5%)	66.3 (22.5%)	23.6 (13.5%)
	Shiraz		2010	nd	301.4 [†] ; 168.3 [§] (End MLF)					97.4 (54.8%)	47.1 (26.5%)	23.8 (13.5%)

Tempranillo			2010	nd	717.6 [†] ; 306.5 [§] (End MLF)				242.9 (75.8%)	27.7 (8.7%)	35.9 (11.2%)
Ginjom et al., 2010 (28)	Shiraz	New South Wales (Australia)	2003		86(36)						
			2004		289(24)						
			2005		299(12)						
	Cabernet Sauvignon	New South Wales (Australia)	2003		160(36)						
			2004		267(24)						
			2005	-	189(12)	-	-	Spect*	-	-	-
	Merlot	New South Wales (Australia)	2003		137(36)						
			2004		122(24)						
			2005		211(12)						
Romero- Cascales et al., 2005 (29)	Monastrell	Jumilla (Spain)		1110	361(0.5)				301.2 (83%)	59.8 (17%)	
	Cabernet Sauvignon		2003	751.9	354.2(0.5)	-	-	HPLC-DAD-MS	211.84 (58.6%)	142.36 (41.4%)	
	Syrah			914.9	350.8(0.5)				216.75 (61.4%)	134.05 (38.6%)	
	Merlot			582.1	225.5(0.5)				146.8 (64%)	78.6 (36%)	
Chira et al., 2011 (30)	Cabernet Sauvignon	Bordeaux (France)	1978		15.31						
			1988		46.38						
			2000		64.31						
			2005		123.38						
	Merlot	Bordeaux (France)	1979	-	9.63	-	-	Spect*	-	-	-
			1988		21.88						
			1998		17.94						
			2003		32.38						

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8 **Table S1** Overview of anthocyanin content in winegrapes and monovarietal wines from different areas, vintages, and aging times. Footnotes and
9 abbreviations legends: * Indicates spectrophotometric measure, as total anthocyanins; *Italic* indicates % of glucoside, acetylated and cinnamoylated
10 on total anthocyanins; [†] indicates total pigment content; [‡] indicates acylated as sums of acetylated, *p*-coumaroylated, and caffeoylated derivatives; [§]
11 monomeric anthocyanins analysed through HPLC-DAD. MLF = malolactic fermentation; AF= alcoholic fermentation.