

Traits and alleles relevant for breeding and genetics:

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Associated markers, their chromosomal localisation, and the donor genotype/species are given. Chromosomal position of a trait/allele is given in megabases according to the 12 x genome sequence of PN40024 (<http://www.genoscope.cns.fr/vitis>). The symbols were discussed at the International Conference on Grapevine Breeding and Genetics at Geneva August 1 - 5, 2010 and assigned. Follow up information on naming of loci will be provided on VIVC to avoid homonyms.

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Symbol	Trait/Allele	Associated marker	Chromosome	Position on chromosome [Mb]	Parent 1	Parent 2	Population size	Genotype of origin	Original species trait/allele derived from?	Reference	Comment
<i>Be size</i>	berry size (berry weight)	SCC8	18	25.9	MTP2223-27	x MTP2121-30	139		<i>V. vinifera</i>	Doligez et al. (2002)	Only one major QTL for berry size is indicated. There are several other QTLs described in the literature.
		VMC7f2	18	26.9	Dominga	x Autumn Seedless	118			Cabezas et al. (2006)	
					Ruby Seedless	x Thompson Seedless	144			Mejia et al. (2007)	
					Italia	x Big Perlon	163			Costantini et al. (2008)	
<i>Mtc</i>	monoterpene content	DXS1	5	3.8	Italia	x Big Perlon	163		<i>V. vinifera</i>	Battilana et al. (2009)	
					Moscato Bianco	x <i>V. riparia</i>	174				
					Muscat Ottonel	x Muscat Ottonel	121		Duchene et al. (2009)		
					Gewürztraminer	x Gewürztraminer	115				
<i>Lin</i>	Linalool content	end41	10		Italia	x Big Perlon	163		<i>V. vinifera</i>	Battilana et al. (2009)	
		VrZAG67/VVIH01			Moscato Bianco	x <i>V. riparia</i>	174				
		VrZAG64	13.4	Muscat Ottonel	x Muscat Ottonel	121		Duchene et al. (2009)			
		VMC3d7	10.8	Gewürztraminer	x Gewürztraminer	115					
<i>Flb</i>	Fleshless berry	VMC2A3	18	0.9	Chardonnay	x Ugni Blanc Mutant	71	Ugni Blanc	<i>V. vinifera</i>	Fernandez et al. (2006)	Mutant
<i>MybA</i>	berry skin colour		2	14.2					<i>V. vinifera</i>		
<i>Pdr1</i>	Pierce's disease	VMCNg3h8	14	25.3	<i>V. rupestris</i>	x <i>V. arizonica</i>	181		<i>V. arizonica</i>	Riaz et al. (2006)	
		VVin64		26.6						Riaz et al. (2008)	
		UDV-095		26.1							
<i>Rdv1</i>	<i>Daktulosphaera vitifoliae</i>	Gf13_9	13	21.9	Gf.V3125	x Börner	188	Börner	<i>V. cinerea</i>	Zhang et al. (2009)	
		VMC8e6		22.5							
<i>Rpv1</i>	<i>Plasmopara viticola</i>	VMC72	12		Syrah	x 28-8-78		28-8-78	<i>M. rotundifolia</i>	Merdinoglu et al. (2003)	
		VV1b32		10.3							
<i>Rpv2</i>	<i>Plasmopara viticola</i>		18		Cabernet Sauvignon	x 8624	129	8624	<i>M. rotundifolia</i>	Wiedemann-Merdinoglu et al. (2006)	
										Bellin et al. (2010)	
<i>Rpv3</i>	<i>Plasmopara viticola</i>	UDV-112	18		Regent	x Lemberger	153	Regent		Welter et al. (2007)	
		UDV-305		24.9	Chardonnay	x Bianca	116	Bianca		Bellin et al. (2009)	
		VMC7f2		26.9							
<i>Rpv4</i>	<i>Plasmopara viticola</i>	VMC7h3	4	4.7	Regent	x Lemberger	153	Regent		Welter et al. (2007)	
		VMCNg2e1		5.2							
<i>Rpv5</i>	<i>Plasmopara viticola</i>	VV1o52b	9	4.0	Cabernet Sauvignon	x Gloire de Montpellier	138	Gloire de Montpellier	<i>V. riparia</i>	Marguerit et al. (2009)	
<i>Rpv6</i>	<i>Plasmopara viticola</i>	VMC8G9	12	20.4	Cabernet Sauvignon	x Gloire de Montpellier	138		<i>V. riparia</i>	Marguerit et al. (2009)	
<i>Rpv7</i>	<i>Plasmopara viticola</i>	UDV-097	7	11.4	Chardonnay	x Bianca	116	Bianca		Bellin et al. (2009)	
<i>Rpv8</i>	<i>Plasmopara viticola</i>	Chr14V015	14	6.6	<i>V. amurensis</i> 'Ruprecht'	x <i>V. amurensis</i> 'Ruprecht'	232	<i>V. amurensis</i> 'Ruprecht'	<i>V. amurensis</i>	Blasi et al. (2011)	
<i>Rpv9</i>	<i>Plasmopara viticola</i>	CCoAOMT	7	16.6	Moscato Bianco	x <i>V. riparia</i>	174	Wr63	<i>V. riparia</i>	Moreira et al. (2011)	CCoAOMT is the candidate gene from which the marker IN0006 was derived
<i>Rpv10</i>	<i>Plasmopara viticola</i>	GF09-46	9	3.7	Gf.Ga-52-42	x Solaris	256	Solaris	<i>V. amurensis</i>	Schwander et al. (2011 online)	
<i>Rpv11</i>	<i>Plasmopara viticola</i>	VVMD27	5	4.5	Regent	x Lemberger	153	Regent		Fischer et al. (2004)	
		CS1E104J11F			Chardonnay	x Bianca	116	Chardonnay		Bellin et al. (2009)	
		VCHR05C		4.1	Gf.Ga-52-42	x Solaris	256	Solaris		Schwander et al. (2011 online)	
<i>Rpv12</i>	<i>Plasmopara viticola</i>								<i>V. amurensis</i>	Di Gaspero et al., in preparation	
<i>Rpv13</i>	<i>Plasmopara viticola</i>	VMC1G3.2	12	10.0	Moscato Bianco	x <i>V. riparia</i>	174	Wr63	<i>V. riparia</i>	Moreira et al. (2011)	

Symbol	Trait/Allele	Associated marker	Chromosome	Position on chromosome [Mb]	Parent 1	Parent 2	Population size	Genotype of origin	Original species trait/allele derived from?	Reference	Comment						
Ren1	<i>Erysiphe necator</i>	UDV-020	13		Nimrang	x Kishmish vatkana	310	Kishmish vatkana		Hoffmann et al. (2008)							
		VMC9h4-2		18.4													
		VMCNg4e10.1		18.4													
Ren2	<i>Erysiphe necator</i>	CS25	14	26.9	Horizon	x Illinois 547-1	58	Illinois 547-1		Dalbo et al. (2001)							
Ren3	<i>Erysiphe necator</i>	UDV-015b	15	7.1	Regent	x Lemberger	153	Regent		Welter et al. (2007)							
		VViv67		10.9													
Ren4	<i>Erysiphe necator</i>		18		C87-41	x B70-57		C87-41	<i>V. romanetii</i>	Mahanil et al. (2010, 2011 online)							
		VMC7f2		26.9								C166-043	x F8909-08	42	C166-043	<i>V. romanetii</i>	Riaz et al. (2011)
Run1	<i>Erysiphe (Uncinula) necator</i>	VMC4f3.1	12	13.1	VRH3082-1-42	x Cabernet Sauvignon	161	VRH3082-1-42	<i>M. rotundifolia</i>	Barker et al. (2005)	powdery mildew resistance originating from <i>Muscaninia</i> should be named as <i>Run...</i>						
		VMC8g9		20.4													
Run2.1	<i>Erysiphe (Uncinula) necator</i>	VMC7f2	18	26.9	JB81-107-11	x Chenin Blanc	97	Magnolia	<i>M. rotundifolia</i>	Riaz et al. (2011)	resistant tissue: Cane						
		VMCNg1e3		20.9								Rachis					
		VVin16		23.4							x Tokay	47		Rachis			
		VMC7f2		26.9									Fruit				
		VMC7f2		26.9							x A90-71	80		Leaf, Cane, Rachis, Fruit			
Run2.2	<i>Erysiphe (Uncinula) necator</i>	VMC7f2	18	26.9	e2-9	x Malaga Rosada	255	Trayshed	<i>M. rotundifolia</i>	Riaz et al. (2011)							
Sdl	seed development inhibitor	SCC8	18	25.9	MTP2223-27	x MTP2121-30	139			Doligez et al. (2002)							
		VMC6f11		23.2								Dominga	x Autumn Seedless	118	Autumn Seedless	Cabezas et al. (2006)	
		VMC7f2		26.9								Dominga	x Autumn Seedless	118			
					Italia	x Big Perlon	163	Big Perlon		Costantini et al. (2008)							
Sex	sex	VVMD34	2	3.7	Horizon	x Illinois 547-1	58			Dalbó et al. (2000)							
		VVS3		4.2								Ramsey	x Riparia Gloire	188		Lowe and Walker (2006)	
		VVlb23		4.9								<i>V. rupestris</i>	x <i>V. arizonica</i>	181		Riaz et al. (2006)	
Ufgt		UFGT	16	2.3	Regent	x Lemberger	153			Fischer et al. (2004)							
Ver	véraison	VMC1E11	16	13.7	Regent	x Lemberger	153	Regent		Fischer et al. (2004)	For véraison (begin of ripening) several QTL loci are published. The locus on LG 16 is the only one which was found in two independent mapping populations.						
														Italia	x Big Perlon	163	
Xir1	<i>Xiphinema index</i>	VMC5a10	19	20.9	<i>V. rupestris</i>	x <i>V. arizonica</i>	185		<i>V. arizonica</i>	Xu et al. (2008)							
		IN2R3b		19								20.9	<i>V. rupestris</i>	x <i>V. arizonica</i>	185	<i>V. arizonica</i>	Hwang et al. (2010)
		M4F3R															
5-gt	anthocyanin 3,5-diglucosides	Gf09_01	9	6.5	Regent	x Lemberger	153	Regent		Hausmann et al. (2009)							