

	Gephebase Gene	GepheID
para (kdr) (<a +para+(kdr)+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene Gephebase="+para (kdr)+"#gepbase-summary-title)	GP00001866	Main curator
	Entry Status: Courtier	
Published		

	Trait Category				
Physiology (#https://www.gephebase.org/search-criteria?/and+TraitCategory=~Physiology)					
Xenobiotic resistance (insecticide) (#https://www.gephebase.org/search-criteria?/and+Trait=~Xenobiotic resistance (insecticide))	Trait				
	Trait State in Taxon A				
Myzus persicae					
	Trait State in Taxon B				
Myzus persicae - resistant					
	Ancestral State				
Taxon A					
Intraspecific (#https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=~Intraspecific)	Taxonomic Status				
Taxon A				Taxon B	
	Latin Name				Latin Name
Myzus persicae (#https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=~Myzus persicae)				Myzus persicae (#https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=~Myzus persicae)	
	Common Name				Common Name
green peach aphid				green peach aphid	
	Synonyms				Synonyms
Myzus (Nectarosiphon) persicae; green peach aphid; peach-potato aphid; Myzus persicae (Sulzer, 1776); Myzus persiceae				Myzus (Nectarosiphon) persicae; green peach aphid; peach-potato aphid; Myzus persicae (Sulzer, 1776); Myzus persiceae	
	Rank				Rank
species				species	
	Lineage				Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Paraneoptera; Hemiptera; Sternorrhyncha; Aphidomorpha; Aphidoidea; Aphididae; Aphidinae; Macrosiphini; Myzus				cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Paraneoptera; Hemiptera; Sternorrhyncha; Aphidomorpha; Aphidoidea; Aphididae; Aphidinae; Macrosiphini; Myzus	
	Parent				Parent
Myzus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=13163)				Myzus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=13163)	
	NCBI Taxonomy ID				NCBI Taxonomy ID
13164 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=13164)				13164 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=13164)	
	is Taxon A an Intraspecies?				is Taxon B an Intraspecies?
No				No	

para	Generic Gene Name	UniProtKB Drosophila melanogaster
bas; bss; CG9907; Dmel\CG9907; DmNav; DmNav1; DmNa[[v]]; DmNa[[V]]; DmNa[[v]]1; l(1)14Da; l(1)ESHS48; lincRNA.S9469; Nav1; Ocd; olfD; par; sbl; sbl-1; Shu; Shudderer	Synonyms	GenebankID or UniProtKB
7227.FBpp0303597 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier= 7227.FBpp0303597)	String	P35500 (http://www.uniprot.org/uniprot/P35500) CAM98294 (https://www.ncbi.nlm.nih.gov/nuccore/CAM98294)
	Sequence Similarities	
Belongs to the sodium channel (TC 1.A.1.10) family. Para subfamily.		
GO - Molecular Function		
GO:0005509 : calcium ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005509)		
GO:0005244 : voltage-gated ion channel activity (https://www.ebi.ac.uk/QuickGO/term/GO:0005244)		
GO:0005248 : voltage-gated sodium channel activity (https://www.ebi.ac.uk/QuickGO/term/GO:0005248)		

GO:0005272 : sodium channel activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005272>)

GO - Biological Process

GO:0045433 : male courtship behavior, veined wing generated song production
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045433>)
GO:0001666 : response to hypoxia (<https://www.ebi.ac.uk/QuickGO/term/GO:0001666>)
GO:0009612 : response to mechanical stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009612>)
GO:0034765 : regulation of ion transmembrane transport
(<https://www.ebi.ac.uk/QuickGO/term/GO:0034765>)
GO:0035725 : sodium ion transmembrane transport
(<https://www.ebi.ac.uk/QuickGO/term/GO:0035725>)
GO:0007638 : mechanosensory behavior
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007638>)
GO:0060078 : regulation of postsynaptic membrane potential
(<https://www.ebi.ac.uk/QuickGO/term/GO:0060078>)

GO - Cellular Component

GO:0005887 : integral component of plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005887>)
GO:0001518 : voltage-gated sodium channel complex
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001518>)

No (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No~#gephebase-summary-title)	Presumptive Null
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~#gephebase-summary-title)	Molecular Type
SNP (https://www.gephebase.org/search-criteria?/and+Aberration Type=~SNP~#gephebase-summary-title)	Aberration Type
Nonsynonymous	SNP Coding Change
M918L	Molecular Details of the Mutation
Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~#gephebase-summary-title)	Experimental Evidence

	Taxon A	Taxon B	Position
Codon	ATG	CTG	-
Amino-acid	Met	Leu	918

Presence and impact of allelic variations of two alternative s-kdr mutations, M918T and M918L, in the voltage-gated sodium channel of the green peach aphid <i>Myzus persicae</i> . (2015) (https://pubmed.ncbi.nlm.nih.gov/25346186)	Main Reference
Panini M; Anaclerio M; Puggioni V; Stagnati L; Nauen R; Mazzoni E	Authors
Pyrethroids have been widely employed in order to control several agricultural pests, including <i>Myzus persicae</i> . Target-site resistance is the main mechanism that confers insensitivity to this class of compounds, and the most common amino acid substitutions are kdr (L1014F) and s-kdr (M918T), but recently another mutation in the s-kdr locus (M918L) has been described in French and Korean populations of <i>M. persicae</i> . Molecular analysis of several Italian populations of <i>M. persicae</i> by pyrosequencing revealed the presence of the new s-kdr mutation (M918L) in different forms. It was found in two different nucleotide polymorphisms (a/t or a/c substitution), in heterozygous or homozygous status, and also in combination with the classic kdr and s-kdr. Bioassays on populations carrying the M918L mutation show that it strongly affects pyrethroid efficacy, particularly of type II pyrethroids such as lambda-cyhalothrin, while it has no effect against DDT. This work provides more information about the new s-kdr M918L mutation in <i>M. persicae</i> , describing a more complicated situation arising from the possible combination with the classic L1014F and M918T. Our data open new questions concerning the origin of these new genotypes with different combinations of target-site mutations, and also their possible influence on control strategies. Â© 2014 Society of Chemical Industry.	Abstract
Detecting the presence of target-site resistance to neonicotinoids and pyrethroids in Italian populations of <i>Myzus persicae</i> . (2014) (https://pubmed.ncbi.nlm.nih.gov/23963887)	Additional References

RELATED GEPHE

8 (acetyl-CoA carboxylase (ACC), Acetylcholinesterase (Ace-1), CYP6CY3, CYP6CY3-CYP6CY4, esterase E4, esterase FE4, nAChR, resistance to dieldrin) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~13164~/and+Trait=Xenobiotic resistance/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
7 (https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~para (kdr)~/and+Taxon ID=~13164~/or+Gene Gephebase=~para (kdr)~/and+Taxon ID=~13164~#gephebase-summary-title)	Related Haplotypes

EXTERNAL LINKS

COMMENTS

The same amino acid change is also found in *M. persicae* populations via another nucleotide change