

## GEPHE SUMMARY

para (kdr) ( <a +para+(kdr)+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+para+(kdr)+"#gephebase-summary-title</a> )	Gephebase Gene	GP00002533	GepheID
Published	Entry Status	Courtier	Main curator

## PHENOTYPIC CHANGE

Physiology ( <a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Physiology+"#gephebase-summary-title</a> )	Trait Category
Xenobiotic resistance (insecticide) ( <a +xenobiotic+resistance+(insecticide)+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Xenobiotic+resistance+(insecticide)+"#gephebase-summary-title</a> )	Trait
Anopheles sacharovi - Sensitive	Trait State in Taxon A
Anopheles sacharovi- Resistant	Trait State in Taxon B
Data not curated	Ancestral State
Intraspecific ( <a +intraspecific+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Intraspecific+"#gephebase-summary-title</a> )	Taxonomic Status

Taxon A	Latin Name	Taxon B	Latin Name
Anopheles sacharovi ( <a +anopheles+sacharovi+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Anopheles+sacharovi+"#gephebase-summary-title</a> )	Anopheles sacharovi ( <a +anopheles+sacharovi+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Anopheles+sacharovi+"#gephebase-summary-title</a> )	Anopheles sacharovi ( <a +anopheles+sacharovi+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Anopheles+sacharovi+"#gephebase-summary-title</a> )	Anopheles sacharovi ( <a +anopheles+sacharovi+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Anopheles+sacharovi+"#gephebase-summary-title</a> )
-	Common Name	-	Common Name
-	Synonyms	-	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Endopterygota; Diptera; Nematocera; Culicomorpha; Culicoidea; Culicidae; Anophelinae; Anopheles; Anopheles; Angusticorn; Anopheles; maculipennis group; maculipennis species complex	Lineage	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Endopterygota; Diptera; Nematocera; Culicomorpha; Culicoidea; Culicidae; Anophelinae; Anopheles; Anopheles; Angusticorn; Anopheles; maculipennis group; maculipennis species complex	Lineage
maculipennis species complex () - (Rank: no rank) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=44533">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=44533</a> )	Parent	maculipennis species complex () - (Rank: no rank) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=44533">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=44533</a> )	Parent
72408 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=72408">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=72408</a> )	NCBI Taxonomy ID	72408 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=72408">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=72408</a> )	NCBI Taxonomy ID
No	is Taxon A an Infrasppecies?	No	is Taxon B an Infrasppecies?

## GENOTYPIC CHANGE

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	P35500 ( <a href="http://www.uniprot.org/uniprot/P35500">http://www.uniprot.org/uniprot/P35500</a> ) () GenebankID or UniProtKB
7227.FBpp0303597 ( <a href="http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0303597">http://string-db.org/newstring.cgi/show_network_section.pl?identifier=7227.FBpp0303597</a> )	String	
Belongs to the sodium channel (TC.1.A.1.10) family. Para subfamily.	Sequence Similarities	
GO:0005509 : calcium ion binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005509">https://www.ebi.ac.uk/QuickGO/term/GO:0005509</a> )	GO - Molecular Function	
GO:0005244 : voltage-gated ion channel activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005244">https://www.ebi.ac.uk/QuickGO/term/GO:0005244</a> )		
GO:0005248 : voltage-gated sodium channel activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005248">https://www.ebi.ac.uk/QuickGO/term/GO:0005248</a> )		

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  
L1014F 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	-	-	-
Amino-acid	Leu	Phe	1014

The first implementation of allele-specific primers for detecting the knockdown and acetylcholinesterase target site mutations in malaria vector, *Anopheles sacharovi*. (2021)  
(<https://pubmed.ncbi.nlm.nih.gov/33357539>) Main Reference

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Abstract  
*Anopheles sacharovi*, a primer malaria vector species of Turkey, have a significant public health importance. It is aimed to determine the insecticide resistance status in *Anopheles sacharovi* populations in the Aegean and Mediterranean regions of Turkey. A total of 1638 individuals were analysed from 15 populations. Bioassay results indicated all *An. sacharovi* populations were resistant to DDT, malathion, fenitrothion, bendiocarb, propoxur. Many populations have begun to have resistance against permethrin and deltamethrin. Biochemical analyses results revealed that glutathione-S-transferases and P450 monooxygenases might be responsible from the mechanisms of DDT resistance; esterases and acetylcholinesterase might be responsible for organophosphate and carbamate resistance; P450 monooxygenases and esterases might be responsible for pyrethroid resistance into populations sampled from the study area. Allele-specific primers detected L1014F and L1014S mutations that provide *kdr* resistance against pyrethroids and DDT. Increased acetylcholinesterase insensitivity was detected while *Ace-1 G119S* mutations were not detected in *An. sacharovi* populations by using allele-specific primers. Overall results indicate the presence of multiple resistance mechanisms in Turkish *An. sacharovi* field populations suggesting that populations might gain resistance against all possible insecticide in the future. Therefore, insecticide resistance management strategies are urgently needed for effective vector control implementation.

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Molecular biology of insect sodium channels and pyrethroid resistance. (2014) (<https://pubmed.ncbi.nlm.nih.gov/24704279>) Additional References

RELATED GEPHE

No matches found.

Related Genes

Related Haplotypes

1 ([https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~para \(kdr\)^/and+Taxon ID=~72408^/or+Gene Gephebase=~para \(kdr\)^/and+Taxon ID=~72408^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~para (kdr)^/and+Taxon ID=~72408^/or+Gene Gephebase=~para (kdr)^/and+Taxon ID=~72408^#gephebase-summary-title))

EXTERNAL LINKS

## COMMENTS

@Parallelism