

GEPHE SUMMARY

IGK (https://www.gephebase.org/search-criteria?/and+Gene Gephebase= [^] IGK [#] gephebase-summary-title)	Gephebase Gene	GP00001382	GepheID
Published	Entry Status	Prigent	Main curator

PHENOTYPIC CHANGE

Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category= [^] Physiology [#] gephebase-summary-title)	Trait Category		
Pathogen resistance (https://www.gephebase.org/search-criteria?/and+Trait = [^] Pathogen resistance [#] gephebase-summary-title)	Trait		
Threespined stickleback fish ; benthic	Trait State in Taxon A		
Threespined stickleback fish ; limnetic	Trait State in Taxon B		
Unknown	Ancestral State		
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status= [^] Intraspecific [#] gephebase-summary-title)	Taxonomic Status		
	Taxon A		Taxon B
	Latin Name		Latin Name
Gasterosteus aculeatus (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms= [^] Gasterosteus aculeatus [#] gephebase-summary-title)	Latin Name	Gasterosteus aculeatus (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms= [^] Gasterosteus aculeatus [#] gephebase-summary-title)	Latin Name
three-spined stickleback	Common Name	three-spined stickleback	Common Name
three-spined stickleback; three spined stickleback; Gasterosteus aculeatus Linnaeus, 1758 species	Synonyms	three-spined stickleback; three spined stickleback; Gasterosteus aculeatus Linnaeus, 1758 species	Synonyms
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Actinopterygii; Actinopteri; Neopterygii; Teleostei; Osteoglossocephalai; Clupeocephala; Euteleosteorpha; Neoteleostei; Eurypterygia; Ctenosquamata; Acanthomorpha; Euacanthomorpha; Percormorphaceae; Eupercaria; Perciformes; Cottioidei; Gasterosteales; Gasterosteidae; Gasterosteus	Lineage	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Actinopterygii; Actinopteri; Neopterygii; Teleostei; Osteoglossocephalai; Clupeocephala; Euteleosteorpha; Neoteleostei; Eurypterygia; Ctenosquamata; Acanthomorpha; Euacanthomorpha; Percormorphaceae; Eupercaria; Perciformes; Cottioidei; Gasterosteales; Gasterosteidae; Gasterosteus	Lineage
Gasterosteus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=69292)	Parent	Gasterosteus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=69292)	Parent
69293 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=69293)	NCBI Taxonomy ID	69293 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=69293)	NCBI Taxonomy ID
Yes	is Taxon A an Intraspecies?	Yes	is Taxon B an Intraspecies?
Threespined stickleback fish ; benthic	Taxon A Description	Threespined stickleback fish ; limnetic	Taxon B Description

GENOTYPIC CHANGE

IGKV1-5	Generic Gene Name	P01602 (http://www.uniprot.org/uniprot/P01602)	UniProtKB Homo sapiens
-	Synonyms	0	GenebankID or UniProtKB
-	String		
-	Sequence Similarities		
GO:0003823 : antigen binding (https://www.ebi.ac.uk/QuickGO/term/GO:0003823)	GO - Molecular Function		
GO:0004252 : serine-type endopeptidase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004252)	GO - Biological Process		
GO:0006955 : immune response (https://www.ebi.ac.uk/QuickGO/term/GO:0006955)			

GO:0006898 : receptor-mediated endocytosis
 (https://www.ebi.ac.uk/QuickGO/term/GO:0006898)
 GO:0050900 : leukocyte migration (https://www.ebi.ac.uk/QuickGO/term/GO:0050900)
 GO:0050776 : regulation of immune response
 (https://www.ebi.ac.uk/QuickGO/term/GO:0050776)
 GO:0038096 : Fc-gamma receptor signaling pathway involved in phagocytosis
 (https://www.ebi.ac.uk/QuickGO/term/GO:0038096)
 GO:0006956 : complement activation
 (https://www.ebi.ac.uk/QuickGO/term/GO:0006956)
 GO:0006958 : complement activation, classical pathway
 (https://www.ebi.ac.uk/QuickGO/term/GO:0006958)
 GO:0038095 : Fc-epsilon receptor signaling pathway
 (https://www.ebi.ac.uk/QuickGO/term/GO:0038095)
 GO:0002377 : immunoglobulin production
 (https://www.ebi.ac.uk/QuickGO/term/GO:0002377)
 GO:0030449 : regulation of complement activation
 (https://www.ebi.ac.uk/QuickGO/term/GO:0030449)

GO - Cellular Component

GO:0005886 : plasma membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0005886)
 GO:0070062 : extracellular exosome (https://www.ebi.ac.uk/QuickGO/term/GO:0070062)
 GO:0005576 : extracellular region (https://www.ebi.ac.uk/QuickGO/term/GO:0005576)
 GO:0005615 : extracellular space (https://www.ebi.ac.uk/QuickGO/term/GO:0005615)
 GO:0072562 : blood microparticle (https://www.ebi.ac.uk/QuickGO/term/GO:0072562)

Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=^Unknown^#gephebase-summary-title) Presumptive Null
 Unknown (https://www.gephebase.org/search-criteria?/and+Molecular Type=^Unknown^#gephebase-summary-title) Molecular Type
 Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=^Unknown^#gephebase-summary-title) Aberration Type
 unknown Molecular Details of the Mutation

Association Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Association Mapping^#gephebase-summary-title) Experimental Evidence

A genome-wide SNP genotyping array reveals patterns of global and repeated species-pair divergence in sticklebacks. (2012) (https://pubmed.ncbi.nlm.nih.gov/22197244) Main Reference

Jones FC; Chan YF; Schmutz J; Grimwood J; Brady SD; Southwick AM; Absher DM; Myers RM; Reimchen TE; Deagle BE; Schluter D; Kingsley DM Authors

Genes underlying repeated adaptive evolution in natural populations are still largely unknown. Stickleback fish (*Gasterosteus aculeatus*) have undergone a recent dramatic evolutionary radiation, generating numerous examples of marine-freshwater species pairs and a small number of benthic-limnetic species pairs found within single lakes [1]. We have developed a new genome-wide SNP genotyping array to study patterns of genetic variation in sticklebacks over a wide geographic range, and to scan the genome for regions that contribute to repeated evolution of marine-freshwater or benthic-limnetic species pairs. Surveying 34 global populations with 1,159 informative markers revealed substantial genetic variation, with predominant patterns reflecting demographic history and geographic structure. After correcting for geographic structure and filtering for neutral markers, we detected large repeated shifts in allele frequency at some loci, identifying both known and novel loci likely contributing to marine-freshwater and benthic-limnetic divergence. Several novel loci fall close to genes implicated in epithelial barrier or immune functions, which have likely changed as sticklebacks adapt to contrasting environments. Specific alleles differentiating sympatric benthic-limnetic species pairs are shared in nearby solitary populations, suggesting an allopatric origin for adaptive variants and selection pressures unrelated to sympatry in the initial formation of these classic vertebrate species pairs.

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RELATED GEPHE

1 (PRKCD) (https://www.gephebase.org/search-criteria?/or+Taxon ID=^69293^/and+Trait=Pathogen resistance/and+groupHaplotypes=true#gephebase-summary-title) Related Genes
 No matches found. Related Haplotypes

EXTERNAL LINKS

COMMENTS

Candidate locus ; mapping is not precise enough

