

GEPHE SUMMARY

	Gephebase Gene	GephelD
I Kappa B Kinase Interacting Protein (IKBIP) (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^I Kappa B Kinase Interacting Protein (IKBIP)^#gephebase-summary-title)	GP00001678	
	Entry Status	Main curator
Published	Prigent	

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=^Physiology^#gephebase-summary-title)	Trait		
Lifespan (https://www.gephebase.org/search-criteria?/and+Trait=^Lifespan^#gephebase-summary-title)	Trait State in Taxon A		
Strain with a maximum lifespan of ~1 year	Trait State in Taxon B		
Strain from Zimbabwe with a maximum lifespan of 4-6 months	Ancestral State		
Unknown	Taxonomic Status		
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=^Intraspecific^#gephebase-summary-title)			
	Taxon A	Taxon B	
	Latin Name	Latin Name	
Nothobranchius furzeri (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Nothobranchius furzeri^#gephebase-summary-title)	Nothobranchius furzeri (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Nothobranchius furzeri^#gephebase-summary-title)	Nothobranchius furzeri (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Nothobranchius furzeri^#gephebase-summary-title)	Latin Name
	Common Name	Common Name	
turquoise killifish	turquoise killifish	turquoise killifish	Common Name
	Synonyms	Synonyms	
turquoise killifish; Nothobranchius furzeri Jubb, 1971	turquoise killifish; Nothobranchius furzeri Jubb, 1971	turquoise killifish; Nothobranchius furzeri Jubb, 1971	Synonyms
	Rank	Rank	
species	species	species	Rank
	Lineage	Lineage	
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Actinopterygii; Actinopteri; Neopterygii; Teleostei; Osteoglossocephalai; Clupeocephala; Euteleosteomorpha; Neoteleostei; Eurypterygia; Ctenosquamata; Acanthomorphata; Euacanthomorphacea; Percomorphacea; Ovalentaria; Atherinomorphae; Cyprinodontiformes; Aplocheiloidei; Nothobranchiidae; Nothobranchius	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Actinopterygii; Actinopteri; Neopterygii; Teleostei; Osteoglossocephalai; Clupeocephala; Euteleosteomorpha; Neoteleostei; Eurypterygia; Ctenosquamata; Acanthomorphata; Euacanthomorphacea; Percomorphacea; Ovalentaria; Atherinomorphae; Cyprinodontiformes; Aplocheiloidei; Nothobranchiidae; Nothobranchius	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Actinopterygii; Actinopteri; Neopterygii; Teleostei; Osteoglossocephalai; Clupeocephala; Euteleosteomorpha; Neoteleostei; Eurypterygia; Ctenosquamata; Acanthomorphata; Euacanthomorphacea; Percomorphacea; Ovalentaria; Atherinomorphae; Cyprinodontiformes; Aplocheiloidei; Nothobranchiidae; Nothobranchius	Lineage
	Parent	Parent	
Nothobranchius () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 28779)	Nothobranchius () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 28779)	Nothobranchius () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 28779)	Parent
	NCBI Taxonomy ID	NCBI Taxonomy ID	
105023 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 105023)	105023 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 105023)	105023 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 105023)	NCBI Taxonomy ID
	is Taxon A an Infraspecies?	is Taxon B an Infraspecies?	
Yes	Yes	Yes	is Taxon B an Infraspecies?
	Taxon A Description	Taxon B Description	
Killifish MZM-0410	Killifish GRZ strain from Zimbabwe	Killifish GRZ strain from Zimbabwe	Taxon B Description

GENOTYPIC CHANGE

	Generic Gene Name	UniProtKB Homo sapiens
IKBIP	Q70UQ0 (http://www.uniprot.org/uniprot/Q70UQ0)	
	Synonyms	GenebankID or UniProtKB
IKIP	0	
	String	
-	Sequence Similarities	
-	GO - Molecular Function	
-	GO - Biological Process	
GO:0010165 : response to X-ray (https://www.ebi.ac.uk/QuickGO/term/GO:0010165)	GO - Cellular Component	

GO:0016021 : integral component of membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016021>)
GO:0016020 : membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0016020>)
GO:0005783 : endoplasmic reticulum
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005783>)
GO:0005789 : endoplasmic reticulum membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005789>)

Presumptive Null

No (<https://www.gephebase.org/search-criteria?/and+Presumptive+Null=^No^#gephebase-summary-title>)

Molecular Type

Unknown (<https://www.gephebase.org/search-criteria?/and+Molecular+Type=^Unknown^#gephebase-summary-title>)

Aberration Type

Unknown (<https://www.gephebase.org/search-criteria?/and+Aberration+Type=^Unknown^#gephebase-summary-title>)

Molecular Details of the Mutation

Under positive selection; down regulated in aging skin

Experimental Evidence

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

Main Reference

Insights into Sex Chromosome Evolution and Aging from the Genome of a Short-Lived Fish. (2015) (<https://pubmed.ncbi.nlm.nih.gov/26638077>)

Authors

Reichwald K; Petzold A; Koch P; Downie BR; Hartmann N; Pietsch S; Baumgart M; Chalopin D; Felder M; Bens M; Sahm A; Szafranski K; Taudien S; Groth M; Arisi I; Weise A; Bhatt SS; Sharma V; Kraus JM; Schmid F; Priebe S; Liehr T; GÄ¶rlach M; Than ME; Hiller M; Kestler HA; Volff JN; Schartl M; Cellerino A; Englert C; Platzer M

Abstract

The killifish *Nothobranchius furzeri* is the shortest-lived vertebrate that can be bred in the laboratory. Its rapid growth, early sexual maturation, fast aging, and arrested embryonic development (diapause) make it an attractive model organism in biomedical research. Here, we report a draft sequence of its genome that allowed us to uncover an intra-species Y chromosome polymorphism representing-in real time-different stages of sex chromosome formation that display features of early mammalian XY evolution "in action." Our data suggest that *gdf6Y*, encoding a TGF- β family growth factor, is the master sex-determining gene in *N. furzeri*. Moreover, we observed genomic clustering of aging-related genes, identified genes under positive selection, and revealed significant similarities of gene expression profiles between diapause and aging, particularly for genes controlling cell cycle and translation. The annotated genome sequence is provided as an online resource (<http://www.nothobranchius.info/NFINgb>).

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Additional References

RELATED GEPHE

1 (Inhibitor of DNA binding 3 (id3)) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=^105023^/and+Trait=Lifespan/and+groupHaplotypes=true#gephebase-summary-title>)

Related Genes

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS