GEPHE SUMMARY

Gephebase Gene

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)

Entry Status

Published

GepheID

GP00001678

Main curator

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

Latin Name

Nothobranchius furzeri (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Nothobranchius furzeri^#gephebase-summary-title)

Common Name

turquoise killifish

Synonyms

turquoise killifish; Nothobranchius furzeri Jubb, 1971

Rank

species

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; Percomorphaceae; Ovalentaria; Atherinomorphae; Cyprinodontiformes; Aplocheiloidei; Nothobranchiidae; Nothobranchius

Parent

Nothobranchius () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 28779)

NCBI Taxonomy ID

105023 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 105023)

is Taxon A an Infraspecies?

Yes

Taxon A Description

Killifish MZM-0410

Taxon B

Latin Name

Nothobranchius furzeri (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Nothobranchius furzeri^#gephebase-summary-title)

Common Name

turquoise killifish

Synonyms

turquoise killifish; Nothobranchius furzeri Jubb, 1971

Rank

species

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; Percomorphaceae; Ovalentaria; Atherinomorphae; Cyprinodontiformes; Aplocheiloidei; Nothobranchiidae; Nothobranchius

Parent

Nothobranchius () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 28779)

NCBI Taxonomy ID

105023 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 105023)

is Taxon B an Infraspecies?

Yes

Taxon B Description

Killifish GRZ strain from Zimbabwe

GENOTYPIC CHANGE

Generic Gene Name

IKBIP

Synonyms

IKIP

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

UniProtKB Homo sapiens

Q70UQ0 (http://www.uniprot.org/uniprot/Q70UQ0)

GenebankID or UniProtKB

()

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; GÃ¶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-Î² family growth factor, is the master sex-determining gene in N.Â 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

Related Genes

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 Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS