GEPHE SUMMARY

Gephebase Gene

DCAF17 (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^DCAF17^#gephebase-summary-title)

GepheID

GP00001570

Entry Status

Published

Main curator

Prigent

PHENOTYPIC CHANGE

Trait Category

Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=^Physiology^#gephebase-summary-title)

Trait

Hair Length (https://www.gephebase.org/search-criteria?/and+Trait=^Hair Length^#gephebase-summary-title)

Trait State in Taxon A

Pig breed from Northern China with long dense hair

Trait State in Taxon B

Pig breed from Southern China with sparse short hair

Ancestral State

Taxon A

Taxonomic Status

Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=^Domesticated^#gephebase-summary-title)

Taxon A

Latin Name

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

Common Name

pig

Synonyms

pig; pigs; swine; wild boar; Sus scrofa Linnaeus, 1758; Sus scrofus

Rank

species

Lineage

cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Cetartiodactyla; Suina; Suidae; Sus

Parent

Sus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 9822)

NCBI Taxonomy ID

9823 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 9823)

is Taxon A an Infraspecies?

Yes

Taxon A Description

Pig breed from Northern China with long dense hair

Taxon B

Latin Name

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

Common Name

pig

Synonyms

pig; pigs; swine; wild boar; Sus scrofa Linnaeus, 1758; Sus scrofus

Rank

species

Lineage

cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Cetartiodactyla; Suina; Suidae; Sus

Parent

Sus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 9822)

NCBI Taxonomy ID

9823 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 9823)

is Taxon B an Infraspecies?

Yes

Taxon B Description

Pig breed from Southern China with sparse short hair

GENOTYPIC CHANGE

Generic Gene Name

DCAF17

Synonyms

-

String

9823.ENSSSCP00000026329 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier=9823.ENSSSCP00000026329)

Sequence Similarities

-

GO - Molecular Function

-

GO - Biological Process

GO:0016567 : protein ubiquitination (https://www.ebi.ac.uk/QuickGO/term/GO:0016567)

GO - Cellular Component

GO:0005829 : cytosol (https://www.ebi.ac.uk/QuickGO/term/GO:0005829)

UniProtKB Sus scrofa

I3LQF0 (http://www.uniprot.org/uniprot/I3LQF0)

GenebankID or UniProtKB

()

GO:0005654 : nucleoplasm (https://www.ebi.ac.uk/QuickGO/term/GO:0005654)
GO:0080008 : Cul4-RING E3 ubiquitin ligase complex
(https://www.ebi.ac.uk/QuickGO/term/GO:0080008)

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

-

Experimental Evidence

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

Main Reference

Adaptation and possible ancient interspecies introgression in pigs identified by whole-genome sequencing. (2015) (https://pubmed.ncbi.nlm.nih.gov/25621459)

Authors

Ai H; Fang X; Yang B; Huang Z; Chen H; Mao L; Zhang F; Zhang L; Cui L; He W; Yang J; Yao X; Zhou L; Han L; Li J; Sun S; Xie X; Lai B; Su Y; Lu Y; Yang H; Huang T; Deng W; Nielsen R; Ren J; Huang L

Abstract

Domestic pigs have evolved genetic adaptations to their local environmental conditions, such as cold and hot climates. We sequenced the genomes of 69 pigs from 15 geographically divergent locations in China and detected 41 million variants, of which 21 million were absent from the dbSNP database. In a genome-wide scan, we identified a set of loci that likely have a role in regional adaptations to high- and low-latitude environments within China. Intriguingly, we found an exceptionally large (14-Mb) region with a low recombination rate on the X chromosome that appears to have two distinct haplotypes in the high- and low-latitude populations, possibly underlying their adaptation to cold and hot environments, respectively. Surprisingly, the adaptive sweep in the high-latitude regions has acted on DNA that might have been introgressed from an extinct Sus species. Our findings provide new insights into the evolutionary history of pigs and the role of introgression in adaptation.

Additional References

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS