

## GEPHE SUMMARY

	Gephebase Gene		GepheID
HOXC8 - uncertain ( <a href="https://www.gephebase.org/search-criteria?/and+Gene">https://www.gephebase.org/search-criteria?/and+Gene</a> Gephebase="HOXC8 - uncertain" #gephebase-summary-title)		GP00000489	Main curator
Published	Entry Status	Martin	

## PHENOTYPIC CHANGE

	Trait Category		
Morphology ( <a href="https://www.gephebase.org/search-criteria?/and+Trait">https://www.gephebase.org/search-criteria?/and+Trait</a> Category="Morphology" #gephebase-summary-title)			
	Trait		
Feathers (crest morphology) ( <a feathers"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="Feathers</a> (crest morphology) #gephebase-summary-title)			
	Trait State in Taxon A		
Gallus gallus			
	Trait State in Taxon B		
Gallus gallus - crested			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Domesticated ( <a href="https://www.gephebase.org/search-criteria?/and+Taxonomic">https://www.gephebase.org/search-criteria?/and+Taxonomic</a> Status="Domesticated" #gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Gallus gallus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon">https://www.gephebase.org/search-criteria?/and+Taxon</a> and Synonyms="Gallus gallus" #gephebase-summary-title)		Gallus gallus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon">https://www.gephebase.org/search-criteria?/and+Taxon</a> and Synonyms="Gallus gallus" #gephebase-summary-title)	
	Common Name		Common Name
chicken		chicken	
	Synonyms		Synonyms
Gallus gallus domesticus; chicken; bantam; chickens		Gallus gallus domesticus; chicken; bantam; chickens	
	Rank		Rank
species		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Archelosauria; Archosauria; Dinosauria; Saurischia; Theropoda; Coelurosauria; Aves; Neognathae; Galloanserae; Galliformes; Phasianidae; Phasianinae; Gallus		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Archelosauria; Archosauria; Dinosauria; Saurischia; Theropoda; Coelurosauria; Aves; Neognathae; Galloanserae; Galliformes; Phasianidae; Phasianinae; Gallus	
	Parent		Parent
Gallus () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030</a> )		Gallus () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030</a> )	
	NCBI Taxonomy ID		NCBI Taxonomy ID
9031 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031</a> )		9031 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031</a> )	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		Yes	
			Taxon B Description
		Gallus gallus - crested	

## GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Gallus gallus
HOXC8		Q9YH13 ( <a href="http://www.uniprot.org/uniprot/Q9YH13">http://www.uniprot.org/uniprot/Q9YH13</a> )	GenebankID or UniProtKB
	Synonyms		
HOXC-8		X94179 ( <a href="https://www.ncbi.nlm.nih.gov/nuccore/X94179">https://www.ncbi.nlm.nih.gov/nuccore/X94179</a> )	
	String		
-			
	Sequence Similarities		
Belongs to the Antp homeobox family.			
	GO - Molecular Function		
GO:0003700 : DNA-binding transcription factor activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0003700">https://www.ebi.ac.uk/QuickGO/term/GO:0003700</a> )			
GO:0043565 : sequence-specific DNA binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0043565">https://www.ebi.ac.uk/QuickGO/term/GO:0043565</a> )			
	GO - Biological Process		
GO:0030182 : neuron differentiation ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0030182">https://www.ebi.ac.uk/QuickGO/term/GO:0030182</a> )			

GO:0009952 : anterior/posterior pattern specification  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009952>)  
GO:0000122 : negative regulation of transcription by RNA polymerase II  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0000122>)  
GO:0048705 : skeletal system morphogenesis  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048705>)

GO - Cellular Component

GO:0005654 : nucleoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005654>)  
GO:0015630 : microtubule cytoskeleton  
(<https://www.ebi.ac.uk/QuickGO/term/GO:0015630>)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

Molecular Details of the Mutation

unknown

Experimental Evidence

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

Main Reference

The crest phenotype in chicken is associated with ectopic expression of HOXC8 in cranial skin. (2012) (<https://pubmed.ncbi.nlm.nih.gov/22514613>)

Authors

Wang Y; Gao Y; Imsland F; Gu X; Feng C; Liu R; Song C; Tixier-Boichard M; Gourichon D; Li Q; Chen K; Li H; Andersson L; Hu X; Li N

Abstract

The Crest phenotype is characterised by a tuft of elongated feathers atop the head. A similar phenotype is also seen in several wild bird species. Crest shows an autosomal incompletely dominant mode of inheritance and is associated with cerebral hernia. Here we show, using linkage analysis and genome-wide association, that Crest is located on the E22C19W28 linkage group and that it shows complete association to the HOXC-cluster on this chromosome. Expression analysis of tissues from Crested and non-crested chickens, representing 26 different breeds, revealed that HOXC8, but not HOXC12 or HOXC13, showed ectopic expression in cranial skin during embryonic development. We propose that Crest is caused by a cis-acting regulatory mutation underlying the ectopic expression of HOXC8. However, the identification of the causative mutation(s) has to await until a method becomes available for assembling this chromosomal region. Crest is unfortunately located in a genomic region that has so far defied all attempts to establish a contiguous sequence.

Additional References

## RELATED GEPHE

Related Genes

14 (ABCA1, CDKN2A, CYP19A1, Endothelin receptor B2, MC1R, PMEL17, SLC45A2=MATP, SOX10, tyrosinase (TYR), tyrosinase-related protein 1 (TYRP1), FGF20, GDF7, KRT6A, KRT75L4) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=~9031^/and+Trait=Feathers/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS