

GEPHE SUMMARY

<p>Interleukin 17A (IL17A) (<a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^Interleukin+17A+(IL17A)^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^Interleukin+17A+(IL17A)^#gephebase-summary-title</a>)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00001593</p> <p>Prigent</p>	<p>GepheID</p> <p>Main curator</p>
---	---	----------------------------------	------------------------------------

PHENOTYPIC CHANGE

<p>Physiology (<a href="https://www.gephebase.org/search-criteria?/and+Trait+Category=^Physiology^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Category=^Physiology^#gephebase-summary-title</a>)</p> <p>Immune response (antibody titre and complement activation) (<a href="https://www.gephebase.org/search-criteria?/and+Trait=^Immune+response+(antibody+titre+and+complement+activation)^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=^Immune+response+(antibody+titre+and+complement+activation)^#gephebase-summary-title</a>)</p> <p>Laying hen of Rhode Island Red type</p> <p>Laying hen of White Leghorn type</p> <p>Unknown</p> <p>Domesticated (<a href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title</a>)</p>	<p>Trait Category</p> <p>Trait</p> <p>Trait State in Taxon A</p> <p>Trait State in Taxon B</p> <p>Ancestral State</p> <p>Taxonomic Status</p>
---	---

	Taxon A		Taxon B	
<p>Gallus gallus (<a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Gallus+gallus^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Gallus+gallus^#gephebase-summary-title</a>)</p> <p>chicken</p> <p>Gallus gallus domesticus; chicken; bantam; chickens</p> <p>species</p> <p>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</p> <p>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>)</p> <p>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>)</p> <p>is Taxon A an Intraspecies?</p> <p>Yes</p> <p>Laying hen of Rhode Island Red type</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p>	<p>Gallus gallus (<a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Gallus+gallus^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Gallus+gallus^#gephebase-summary-title</a>)</p> <p>chicken</p> <p>Gallus gallus domesticus; chicken; bantam; chickens</p> <p>species</p> <p>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</p> <p>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>)</p> <p>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>)</p> <p>is Taxon B an Intraspecies?</p> <p>Yes</p> <p>Laying hen of White Leghorn type</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p>	
				<p>UniProtKB Gallus gallus</p> <p>GenebankID or UniProtKB</p>

GENOTYPIC CHANGE

<p>IL17A</p> <p>-</p> <p>-</p> <p>-</p> <p>GO:0005125 : cytokine activity (<a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005125">https://www.ebi.ac.uk/QuickGO/term/GO:0005125</a>)</p> <p>GO:0006954 : inflammatory response (<a href="https://www.ebi.ac.uk/QuickGO/term/GO:0006954">https://www.ebi.ac.uk/QuickGO/term/GO:0006954</a>)</p>	<p>Generic Gene Name</p> <p>Synonyms</p> <p>String</p> <p>Sequence Similarities</p> <p>GO - Molecular Function</p> <p>GO - Biological Process</p> <p>GO - Cellular Component</p>	<p>B4ER12 (<a href="http://www.uniprot.org/uniprot/B4ER12">http://www.uniprot.org/uniprot/B4ER12</a>)</p> <p>0</p>	
---	--	--	--

GO:0005576 : extracellular region (<https://www.ebi.ac.uk/QuickGO/term/GO:0005576>)

Presumptive Null

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

unknown

Experimental Evidence

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

Main Reference

Across-line SNP association study of innate and adaptive immune response in laying hens. (2010) (<https://pubmed.ncbi.nlm.nih.gov/19781038>)

Authors

Biscarini F; Bovenhuis H; van Arendonk JA; Parmentier HK; Jungerius AP; van der Poel JJ

Abstract

The aim of the present study was to detect quantitative trait loci (QTL) for innate and adaptive immunity in laying hens. For this purpose, the associations between 1022 single nucleotide polymorphism (SNP) markers and immune traits were studied in 583 hens from nine different layer lines. Immune traits were natural antibodies for keyhole limpet haemocyanin (KLH) and lipopolysaccharide (LPS) at 20, 40 and 65 weeks, acquired antibodies to the vaccinal virus of Newcastle disease at 20 weeks, and complement activity measured on sheep and bovine red blood cells at 20, 40 and 65 weeks. We adopted a novel approach based on across-line analysis and testing of the SNP-by-line interaction. Among lines, linkage disequilibrium is conserved at shorter distances than in individual lines; therefore, SNPs significantly associated with immune traits across lines are expected to be near the functional mutations. In the analysis, the SNPs that had a significant across-line effect but did not show significant SNP-by-line interaction were identified to test whether the association was consistent in the individual lines. Ultimately, 59 significant associations between SNPs and immune traits were detected. Our results confirmed some previously identified QTL and identified new QTL potentially involved in the immune function. We found evidence for a role of IL17A (chromosome 3) in natural and acquired antibody titres and in the classical and alternative pathways of complement activation. The major histocompatibility genes on chromosome 16 showed significant association with natural and acquired antibody titres and classical complement activity. The IL12B gene on chromosome 13 was associated with natural antibody titres.

Additional References

## RELATED GEPHE

Related Genes

4 (HTR2C serotonin receptor, HTR3A serotonin receptor, Interleukin 10 (IL10), Interleukin 12B (IL12B)) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^9031^/and+Trait=Immune response/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS

2 associated SNPs