

## GEPHE SUMMARY

	Gephebase Gene	GephelD
NV10127-NV10128-NV10129 gene cluster ( <a href="https://www.gephebase.org/search-criteria?/and+Gene Gephebase^NV10127-NV10128-NV10129 gene cluster^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene Gephebase^NV10127-NV10128-NV10129 gene cluster^#gephebase-summary-title</a> )	GP00000744	Main curator
	Entry Status	
Published		

## PHENOTYPIC CHANGE

	Trait Category		
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> )	Trait		
Pheromone production (isomeric/chirality divergence) ( <a href="https://www.gephebase.org/search-criteria?/and+Trait^=Pheromone production (isomeric/chirality divergence)^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait^=Pheromone production (isomeric/chirality divergence)^#gephebase-summary-title</a> )			
	Trait State in Taxon A		
Nasonia vitripennis			
	Trait State in Taxon B		
Nasonia giraulti			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Interspecific ( <a href="https://www.gephebase.org/search-criteria?/and+Taxonomic Status^=Interspecific^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic Status^=Interspecific^#gephebase-summary-title</a> )			
Taxon A		Taxon B	
Nasonia vitripennis	Latin Name	Nasonia giraulti	Latin Name
( <a href="https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms^=Nasonia vitripennis^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms^=Nasonia vitripennis^#gephebase-summary-title</a> )		( <a href="https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms^=Nasonia giraulti^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms^=Nasonia giraulti^#gephebase-summary-title</a> )	
jewel wasp	Common Name	-	Common Name
jewel wasp; Nasonia vitripennis (Walker, 1836)	Synonyms	Nasonia giraulti Darling, 1990	Synonyms
species	Rank		Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Hymenoptera; Apocrita; Parasitoida; Chalcidoidea; Pteromalidae; Pteromalinae; Nasonia	Lineage	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Holometabola; Hymenoptera; Apocrita; Parasitoida; Chalcidoidea; Pteromalidae; Pteromalinae; Nasonia	Lineage
Nasonia () - (Rank: genus)	Parent	Nasonia () - (Rank: genus)	Parent
( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7424">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7424</a> )	NCBI Taxonomy ID	( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7424">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7424</a> )	NCBI Taxonomy ID
7425		7426	
( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7425">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7425</a> )		( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7426">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 7426</a> )	
No	is Taxon A an Infraspecies?	No	is Taxon B an Infraspecies?

## GENOTYPIC CHANGE

NV10127	Generic Gene Name	UniProtKB Nasonia vitripennis
-	Synonyms	GenebankID or UniProtKB
-	String	
-	Sequence Similarities	
-	GO - Molecular Function	
-	GO - Biological Process	
-	GO - Cellular Component	
-		Presumptive Null
Unknown ( <a href="https://www.gephebase.org/search-criteria?/and+Presumptive Null^=Unknown^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Presumptive Null^=Unknown^#gephebase-summary-title</a> )		

Unknown ( <a href="https://www.gephebase.org/search-criteria?/and+Molecular%20Type=%5EUnknown%23gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Molecular Type=%5EUnknown%23gephebase-summary-title</a> )	Molecular Type
Unknown ( <a href="https://www.gephebase.org/search-criteria?/and+Aberration%20Type=%5EUnknown%23gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Aberration Type=%5EUnknown%23gephebase-summary-title</a> )	Aberration Type
Not identified. Gene conversion between the three paralogues in tandem	Molecular Details of the Mutation
Linkage Mapping ( <a href="https://www.gephebase.org/search-criteria?/and+Experimental%20Evidence=%5ELinkage%20Mapping%23gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Experimental Evidence=%5ELinkage Mapping%23gephebase-summary-title</a> )	Experimental Evidence
Behavioural and genetic analyses of <i>Nasonia</i> shed light on the evolution of sex pheromones. (2013) ( <a href="https://pubmed.ncbi.nlm.nih.gov/23407492">https://pubmed.ncbi.nlm.nih.gov/23407492</a> )	Main Reference
Niehuis O; Buellesbach J; Gibson JD; Pothmann D; Hanner C; Mutti NS; Judson AK; Gadau J; Ruther J; Schmitt T	Authors
Sex pheromones play a pivotal role in the communication of many sexually reproducing organisms. Accordingly, speciation is often accompanied by pheromone diversification enabling proper mate finding and recognition. Current theory implies that chemical signals are under stabilizing selection by the receivers who thereby maintain the integrity of the signals. How the tremendous diversity of sex pheromones seen today evolved is poorly understood. Here we unravel the genetics of a newly evolved pheromone phenotype in wasps and present results from behavioural experiments indicating how the evolution of a new pheromone component occurred in an established sender-receiver system. We show that male <i>Nasonia vitripennis</i> evolved an additional pheromone compound differing only in its stereochemistry from a pre-existing one. Comparative behavioural studies show that conspecific females responded neutrally to the new pheromone phenotype when it evolved. Genetic mapping and gene knockdown show that a cluster of three closely linked genes accounts for the ability to produce this new pheromone phenotype. Our data suggest that new pheromone compounds can persist in a sender's population, without being selected against by the receiver and without the receiver having a pre-existing preference for the new pheromone phenotype, by initially remaining unperceived. Our results thus contribute valuable new insights into the evolutionary mechanisms underlying the diversification of sex pheromones. Furthermore, they indicate that the genetic basis of new pheromone compounds can be simple, allowing them to persist long enough in a population for receivers to evolve chemosensory adaptations for their exploitation.	
Abstract	
<a href="#">Additional References</a>	

## RELATED GEPHE

No matches found.	Related Genes
No matches found.	Related Haplotypes

## EXTERNAL LINKS

## COMMENTS

Cluster of paralogous genes @SexualTrait