

	Gephebase Gene	GepheID
Mla (=Sr33/AetRGA1e) (<a #gephebase-summary-title"="" +mla+("="Sr33/AetRGA1e)+" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+Mla+("="Sr33/AetRGA1e)+"#gephebase-summary-title)	GP00000667	
	Entry Status	Martin
Published		

Physiology (#https://www.gephebase.org/search-criteria?/and+Trait+Category=~Physiology)		Trait Category	
Pathogen resistance (#https://www.gephebase.org/search-criteria?/and+Trait=~Pathogen+resistance)		Trait	
Triticum aestivum - susceptible		Trait State in Taxon A	
Aegilops tauschii and resistant strains of domesticated Triticum aestivum		Trait State in Taxon B	
Data not curated		Ancestral State	
Domesticated (#https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated)		Taxonomic Status	
Taxon A		Taxon B	
Triticum aestivum (#https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Triticum+aestivum)	Latin Name	Aegilops tauschii (#https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Aegilops+tauschii)	Latin Name
bread wheat	Common Name	-	Common Name
Triticum aestivum subsp. aestivum; Triticum vulgare; bread wheat; Canadian hard winter wheat; common wheat; wheat; Triticum aestivum L.; Triticum vulgare L.; Triticum vulgare Vill., nom. illeg.; Tricum aestivum; Triticum aestivam; Triticum aestivum8	Synonyms	Aegilops squarrosa; Aegilops squarrosa subsp. squarrosa; Patropyrum tauschii; Patropyrum tauschii subsp. tauschii; Triticum aegilops; Triticum tauschii; Aegilops squarrosa auct., non L., 1753; Aegilops tauschii Coss.; Patropyrum tauschii (Coss.) A.Love; Triticum aegilops P.Beauv. ex Roem. & Schult.; Triticum tauschii (Coss.) Schmalh.; Aegilopsm tauschii	Synonyms
species	Rank	species	Rank
cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticoideae; Triticeae; Triticinae; Triticum	Lineage	cellular organisms; Eukaryota; Viridiplantae; Streptophyta; Streptophytina; Embryophyta; Tracheophyta; Euphyllophyta; Spermatophyta; Magnoliophyta; Mesangiospermae; Liliopsida; Petrosaviidae; commelinids; Poales; Poaceae; BOP clade; Pooideae; Triticoideae; Triticeae; Triticinae; Aegilops	Lineage
Triticum () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4564)	Parent	Aegilops () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4480)	Parent
4565 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4565)	NCBI Taxonomy ID	37682 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=37682)	NCBI Taxonomy ID
No	is Taxon A an Intraspecies?	No	is Taxon B an Intraspecies?

Mla1	Generic Gene Name	UniProtKB Hordeum vulgare subsp. vulgare
-	Synonyms	Q7EXP5 (http://www.uniprot.org/uniprot/Q7EXP5)
-	String	AGQ17386 (https://www.ncbi.nlm.nih.gov/nuccore/AGQ17386)
-	Sequence Similarities	
Belongs to the disease resistance NB-LRR family.		
GO - Molecular Function		
GO:0043531 : ADP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0043531)		
GO - Biological Process		
-		
GO - Cellular Component		
-		
Presumptive Null		

Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown~#gephebase-summary-title)	Molecular Type
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~#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
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping~#gephebase-summary-title)	Main Reference
The gene <i>Sr33</i> , an ortholog of barley <i>Mla</i> genes, encodes resistance to wheat stem rust race Ug99. (2013) (https://pubmed.ncbi.nlm.nih.gov/23811228)	Authors
Periyannan S; Moore J; Ayliffe M; Bansal U; Wang X; Huang L; Deal K; Luo M; Kong X; Bariana H; Mago R; McIntosh R; Dodds P; Dvorak J; Lagudah E	Abstract
Wheat stem rust, caused by the fungus <i>Puccinia graminis</i> f. sp. <i>tritici</i> , afflicts bread wheat (<i>Triticum aestivum</i>). New virulent races collectively referred to as “Ug99” have emerged, which threaten global wheat production. The wheat gene <i>Sr33</i> , introgressed from the wild relative <i>Aegilops tauschii</i> into bread wheat, confers resistance to diverse stem rust races, including the Ug99 race group. We cloned <i>Sr33</i> , which encodes a coiled-coil, nucleotide-binding, leucine-rich repeat protein. <i>Sr33</i> is orthologous to the barley (<i>Hordeum vulgare</i>) <i>Mla</i> mildew resistance genes that confer resistance to <i>Blumeria graminis</i> f. sp. <i>hordei</i> . The wheat <i>Sr33</i> gene functions independently of RAR1, SGT1, and HSP90 chaperones. Haplotype analysis from diverse collections of <i>Ae. tauschii</i> placed the origin of <i>Sr33</i> resistance near the southern coast of the Caspian Sea.	Additional References

RELATED GEPHE

4 (Lr21, Lr67, Pm3, Pore-forming toxin-like (PFT)) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~4565~/and+Trait=Pathogen resistance/or+Taxon ID=~37682~/and+Trait=Pathogen resistance/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

@Introgression