

GEPHE SUMMARY

| | | |
|---|----------------|--------------|
| | Gephebase Gene | GephelD |
| OVATE (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^OVATE^#gephebase-summary-title) | GP00000815 | |
| | Entry Status | Main curator |
| Published | Martin | |

PHENOTYPIC CHANGE

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

| | Trait State in Taxon A |
|--|------------------------|
| Fruit shape (https://www.gephebase.org/search-criteria?/and+Trait=^Fruit shape^#gephebase-summary-title) | |

| | Trait State in Taxon B |
|---------------------------------|------------------------|
| Lycopersicon esculentum - round | |

| | Ancestral State |
|--|-----------------|
| Lycopersicon esculentum - TA503 (L. esculentum cv. Yellow Pear); LA791 (L. esculentum cv. Longjohn); and LA0025 | |

| | Taxonomic Status |
|------------------|------------------|
| Data not curated | |

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

| Taxon A | Latin Name | Taxon B | Latin Name |
|---|------------|---|------------|
| Solanum lycopersicum (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Solanum+lycopersicum^#gephebase-summary-title) | | Solanum lycopersicum (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Solanum+lycopersicum^#gephebase-summary-title) | |

| | Common Name | | Common Name |
|--------|-------------|--------|-------------|
| tomato | | tomato | |

| | Synonyms | | Synonyms |
|---|----------|---|----------|
| Lycopersicon esculentum var. esculentum; Solanum esculentum; Solanum lycopersicum var. humboldtii; tomato; Lycopersicon esculentum Mill.; Solanum esculentum Dunal; Solanum lycopersicum L.; Lycopersicon lycopersicum; Lycopersicum esculentum; Solanum lycopersicon | | Lycopersicon esculentum var. esculentum; Solanum esculentum; Solanum lycopersicum var. humboldtii; tomato; Lycopersicon esculentum Mill.; Solanum esculentum Dunal; Solanum lycopersicum L.; Lycopersicon lycopersicum; Lycopersicum esculentum; Solanum lycopersicon | |

| | Rank | | Rank |
|---------|------|---------|------|
| species | | species | |

| | Lineage | | Lineage |
|---|---------|---|---------|
| cellular organisms; Eukaryota; Viriplantae; Streptophytina; Embryophyta; Tracheophyta; Euphylophyta; Spermatophytina; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Solanaceae; Solanoideae; Solaneae; Solanum; Lycopersicon | | cellular organisms; Eukaryota; Viriplantae; Streptophytina; Embryophyta; Tracheophyta; Euphylophyta; Spermatophytina; Magnoliophyta; Mesangiospermae; eudicotyledons; Gunneridae; Pentapetalae; asterids; lamiids; Solanales; Solanaceae; Solanoideae; Solaneae; Solanum; Lycopersicon | |

| | Parent | | Parent |
|---|--------|---|--------|
| Lycopersicon () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274) | | Lycopersicon () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 49274) | |

| | NCBI Taxonomy ID | | NCBI Taxonomy ID |
|---|------------------|---|------------------|
| 4081 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4081) | | 4081 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 4081) | |

| | is Taxon A an Infraspecies? | | is Taxon B an Infraspecies? |
|----|-----------------------------|-----|-----------------------------|
| No | | Yes | |

| | Taxon B Description |
|--|---------------------|
| Lycopersicon esculentum - TA503 (L. esculentum cv. Yellow Pear); LA791 (L. esculentum cv. Longjohn); and LA0025 | |

GENOTYPIC CHANGE

| | Generic Gene Name | | UniProtKB Solanum lycopersicum |
|---|-------------------|--|--------------------------------|
| - | | Q8GSM4 (http://www.uniprot.org/uniprot/Q8GSM4) | |

| | Synonyms | | GenebankID or UniProtKB |
|----|----------|--|-------------------------|
| PR | | AY140893 (https://www.ncbi.nlm.nih.gov/nuccore/AY140893) | |

| | String |
|---|--------|
| - | |

| | Sequence Similarities |
|---|-----------------------|
| - | |

| | GO - Molecular Function |
|---|-------------------------|
| - | |

| | GO - Biological Process |
|---|-------------------------|
| - | |

GO - Cellular Component

| | |
|---|-----------------------------------|
| - | Presumptive Null |
| Yes (https://www.gephebase.org/search-criteria?/and+Presumptive Null=%27Yes%27#gephebase-summary-title) | Molecular Type |
| Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=%27Coding%27#gephebase-summary-title) | Aberration Type |
| SNP (https://www.gephebase.org/search-criteria?/and+Aberration Type=%27SNP%27#gephebase-summary-title) | SNP Coding Change |
| Nonsense | Molecular Details of the Mutation |
| V164* caused by G>T; which leads to a 75-aa truncation in the C terminus of the predicted protein | Experimental Evidence |
| Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=%27Linkage Mapping%27#gephebase-summary-title) | |

| | Taxon A | Taxon B | Position |
|------------|---------|---------|----------|
| Codon | - | - | - |
| Amino-acid | - | - | - |

| | |
|--|----------------|
| A new class of regulatory genes underlying the cause of pear-shaped tomato fruit. (2002) (https://pubmed.ncbi.nlm.nih.gov/12242331) | Main Reference |
| Liu J; Van Eck J; Cong B; Tanksley SD | Authors |

A common, recurring theme in domesticated plants is the occurrence of pear-shaped fruit. A major quantitative trait locus (termed ovate) controlling the transition from round to pear-shaped fruit has been cloned from tomato. OVATE is expressed early in flower and fruit development and encodes a previously uncharacterized, hydrophilic protein with a putative bipartite nuclear localization signal, Von Willebrand factor type C domains, and an approximately equal 70-aa C-terminal domain conserved in tomato, *Arabidopsis*, and rice. A single mutation, leading to a premature stop codon, causes the transition of tomato fruit from round- to pear-shaped. Moreover, ectopic, transgenic expression of OVATE unevenly reduces the size of floral organs and leaflets, suggesting that OVATE represents a previously uncharacterized class of negative regulatory proteins important in plant development.

Additional References

RELATED GEPHE

| | |
|---|--------------------|
| 1 (SUN) (https://www.gephebase.org/search-criteria?/or+Taxon ID=%274081%27/and+Trait=Fruit shape/and+groupHaplotypes=true#gephebase-summary-title) | Related Genes |
| No matches found. | Related Haplotypes |

EXTERNAL LINKS

COMMENTS