

Supplementary File

Multipile alignment of ϵ -LCY proteins from higher plants. Amino acid sequence identities. Comparison of amino sequences of *Nicotiana tabacum* (1: Nt ϵ -LCY1), *N. sylvestris* (2: Nsy ϵ -LCY), *N. tomentosiformis* (3: Ntome ϵ -LCY), *Solanum tuberosum* (4: St ϵ -LCY), *Solanum lycopersicum* (5: Sl ϵ -LCY), *Arabidopsis* (6: At ϵ -LCY).

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1 : MDCIGARNFSTMAVFTCPFRFKSLGRKRIMPRKKQPFWPIH-MKVKCS-----GSDSCVVVKEDFADEEDYIKAGGSELVFVQMQQNKDMDLQSKLSDKLRQISSAG : 100
2 : MECIGARNFATMAVFTCPFRFKSLGRKRIMPRKKQPFWPIH-MKVKCS-----GSDSCVVVKEDFADEEDYIKAGGSELVFVQMQQNKDMDLQSKLSDKLRQISSAG : 100
3 : MECIGARNFATMAVFTCPFRFKSLGRRRIMPRKKQPFWPIH-MQVKCS-----GNEscvvvkEDFADEEDYIKAGGSELVFVQMQQNKDMDLQSKLSDKLRQISSAG : 100
4 : MECVGAQNVGAMAVFTTRPRLKPLVGRRIMPRKKQSFVPMSSMQVKNS--SSGSEscvvdKEDFADEEDYIKAGGSQLIFVQMQQKKDMDQSKLSDELROIS-AG : 103
5 : MECVGAQNVGAMAVFTTRPRLKPLVGRRVMERKKQSEWRMSSMKVKNS--SSGSDSCVVDKEDFADEEDYIKAGGSQLVFVQMQQKKDMDQSKLSDELROIS-AG : 103
6 : MECVGARNFAAMAVSTFPSSWSCRKFPVVKRYSYRNIRFGLCSVRASGGGSSGSEscvavREDFADEEDFVKAGGSEILFVQMQQNKDMDQSKLVDKLPPIIS-IG : 105
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1 : QTILDLVVIGCGPAGLALAAESAKLGLNVGLVGPDLPTNNYGVWEDEFKDLGLQACIEHVWSEITIVYLDADDPILIGRAYGRVSRHLHEELLKRCVEAGVLYLN : 206
2 : QTILDLVVIGCGPAGLALAAESAKLGLNVGLVGPDLPTNNYGVWEDEFKDLGLQACIEHVWSEITIVYLDADDPILIGRAYGRVSRHLHEELLKRCVEAGVLYLN : 206
3 : QTILDLVVIGCGPAGLALAAESAKLGLNVGLVGPDLPTNNYGVWEDEFKDLGLQACIEHVWSEITIVYLDADDPILIGRAYGRVSRHLHEELLKRCVEAGVLYLN : 206
4 : QTVLDLVVIGCGPAGLALAAESAKLGLNVGLVGPDLPTNNYGVWEDEFKDLGLQACIEHVWSEITIVYLDADDPILIGRAYGRVSRHLHEELLKRCVEAGVLYLN : 209
5 : QTVLDLVVIGCGPAGLALAAESAKLGLNVGLVGPDLPTNNYGVWEDEFKDLGLQACIEHVWSEITIVYLDADDPILIGRAYGRVSRHLHEELLKRCVEAGVLYLN : 209
6 : DGAALDLVVIGCGPAGLALAAESAKLGLKVGLIGPDLPTNNYGVWEDEFNDLGLQKACIEHVWSEITIVYLDADDPILIGRAYGRVSRHLHEELLKRCVESGVSYLS : 211
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1 : SKVDRIVESTSGHSLVECEGDIVIPCRFVTVASGAASGKFLQYELGGPRVSVQTAYGVEVEVDNNPYDPSIMVFM DYRDYVRHDAQSLEAKYPTFLYAMPMTKTGV : 312
2 : SKVDRIVESTSGHSLVECEGDIVIPCRFVTVASGAASGKFLQYELGGPRVSVQTAYGVEVEVDNNPYDPSIMVFM DYRDYVRHDAQSLEAKYPTFLYAMPMTKTRV : 312
3 : SKVDRIVESTSGHSLVECEGDIVIPCRFVTVASGAASGKFLQYELGGPRVSVQTAYGVEVEVDNNPYDPSIMVFM DYRDYVRHDAQSLEAKYPTFLYAMPMTKTRV : 312
4 : SKVDRIVEATNGHSLVECEGDIVIPCRFVTVASGAASGKFLQYELGGPRVSVQTAYGVEVEVDNNPFDP SIMVFM DYRDYVRHDAQSLEAKYPTFLYAMPMSPTRV : 315
5 : SKVDRIVEATNGHSLVECEGDIVIPCRFVTVASGAASGKFLQYELGGPRVSVQTAYGVEVEVDNNPFDP SIMVFM DYRDYVRHDAQSLEAKYPTFLYAMPMSPTRV : 315
6 : SKVDSITEASDGLRLVACDDNNVIPCRLATVASGAASGKFLQYELVGGPRVCVQTAYGVEVEVDNNSPYDPDQMVFM DYRDYTNEKVRSLAEYPTFLYAMPMTKSRL : 317
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1 : FFEETCLASKDAMPFDLLKKKLMRLRLNTLGIKIKKITYEEEWSYIPVGGSLPNTQKTLAFGAAASMVHPATGYSVVRSLSEAPKCA SVLANILRQNHVKNMTSSS : 418
2 : FFEETCLASKDAMPFDLLKKKLMRLRLNTLGIKIKKITYEEEWSYIPVGGSLPNTQKTLAFGAAASMVHPATGYSVVRSLSEAPKCA SVLANILRQNHVKNMTSSS : 418
3 : FFEETCLASKDAMPFDLLKKKLMRLRLNTLGVRIKITYEEEWSYIPVGGSLPNTQKTLAFGAAASMVHPATGYSVVRSLSEAPKCA SVLANILRQNHVKNMTSSS : 418
4 : FFEETCLASKDAMPFDLLKKKLMRLRLNTLGVRIKITYEEEWSYIPVGGSLPNTQKTLAFGAAASMVHPATGYSVVRSLSEAPKCA SVLANILRQNHVKNMTSSS : 421
5 : FFEETCLASKDAMPFDLLKKKLMRLRLNTLGVRIKITYEEEWSYIPVGGSLPNTQKTLAFGAAASMVHPATGYSVVRSLSEAPKCA SVLANILRQHYSKNMTSSS : 421
6 : FFEETCLASKDVMPFDLLKTKLMRLRLDTLGIKIKKITYEEEWSYIPVGGSLPNTQKTLAFGAAASMVHPATGYSVVRSLSEAPKCA SVLANILRQNHVKNMTSSS : 421
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1 : ATSSISTQAWNTLWPEERKRQRSFFLFLGLALILQDIEGIRSFRAFFRVPKWMWQGFGLGSSLSSADLMLFAFYMFIIAPNDRKGLIRHLLSDPTGATMIRTYLTF : 524
2 : ATSSISTQAWNTLWPEERKRQRSFFLFLGLALILQDIEGIRSFRAFFRVPKWMWQGFGLGSSLSSADLMLFAFYMFIIAPNDRKGLIRHLLSDPTGATMIRTYLTF : 524
3 : TTSSISTQAWNTLWPEERKRQRSFFLFLGLALILQDIEGIRSFRAFFRVPKWMWQGFGLGSSLSSADLMLFAFYMFIIAPNDRKGLIRHLLSDPTGATMIRTYLTF : 524
4 : TSSISTQAWNTLWPEERKRQRSFFLFLGLALILQDIEGIRSFRAFFRVPKWMWQGFGLGSSLSSADLMLFAFYMFIIAPNDRKGLIRHLLSDPTGATLIRTYLTF : 527
5 : IPSISTQAWNTLWPEERKRQRSFFLFLGLALILQDIEGIRSFRAFFRVPKWMWQGFGLGSSLSSADLMLFAFYMFIIAPNDRKGLIRHLLSDPTGATLIRTYLTF : 527
6 : ---TSRQAWDTLWPEERKRQRAFFLFLGLALIVQDIEGIRSFRTFFRVPKWMWQGFGLGSTLTSGDLVLFAYMFVISPNNLKGLINHLISDPTGATMIKTYLKV : 524
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Identities of Nt ϵ -LCY1 with other ϵ -LCYs in higher plants.

Amino Acid	Nsyϵ-LCY	Ntomϵ-LCY	Stϵ-LCY	Slϵ-LCY	Atϵ-LCY
Identity (%)	99.4	97.1	90.9	90.3	72.6