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Supporting information for article:

Structure of the unique tetrameric STENOFOLIA homeodomain bound with target promoter DNA

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Table S1 Primers used in this study.**Probes for EMSA**

MtAS2-F TGGATTAAATAATGAAGTGACA
MtAS2-R TGTCACTTCATTATTAAATCCA
MtLOB39-F GCAAATTAATGATTATTCAAG
MtLOB39-R CTTGAATAATCATTAATTGC
TGA-F GCAAATCTATGATCTATTCAAG
TGA-R CTTGAATAGATCATAGATTGC
TAAT-F GCAAATTAATTATTATTAAAG
TAAT-R CTTAATAATAATTAAATTGC

Mutations

L107MF AACAGTTAACAGAGCAaTGGAAGAATTG
L107MR CAATTCTCCATTGCTCTTAACGT
L110MF GCACTGGAAGAAaTGTATAGAAGAGG
L110MR CCTCTTCTATACATTCTTCAGTGC
L130MF CAAATAACTGCCAGATgAGAAAATTGG
L130MR CCAAATTTCTCATCTGGCAGTTATTG
L107110MF AACAGTTAACAGAGCAaTGGAAGAAaTGTATAGAAGAGG
L107110MR CCTCTTCTATACATTCTTCATTGCTCTTAACGT
N147IF TCTATTGGTTTCAGATTACAAAGC
N147IR GCTTGTGAATCTGAAACCAATAGA
FY-F AGGAAAAATGTTACTATTGGTTTCAGAA
FY-R TTCTGAAACCAATAGTAAACATTTCGCCT
R/Q-F GAAGAATTGTATAGACAAGGAACAAGAACAC
R/Q-R GTGTTCTGTTCTGTCTATACAATTCTC
KRR-F CAGAGAAAGGCAAGCAGCAGCGCGTCAAATGGAATC
KRR-R CAGAGAAAGGCAAGCAGCAGCGCGTCAAATGGAATC
R151A-F CAGAACATCACAAAGCCAGGCAAAGGAAAAACGACGGC
R151A-R GCCGTCGTTTGCCTTGCCTGGCTTGATTCTG

Protein expression

STF-N85-NcoI-F aaccatgggaAATAATCCATCTGCAGCAGTTGTG
STF-N190-HindIII-R aaaagctTCAGTTTAGTGTGTTCAACTCAAACAC

Complementation

STF-F-GW GGGGACAAGTTGTACAAAAAAGCAGGCTTCATGTGGATGGTGGGTTACAAT

STF-R-GW

GGGGACCACTTGTACAAGAAAGCTGGGTCTCAGTTTCAAGGGAAGAAACT

Table S2 Phenotypes of complementation assays in *Nicotiana sylvestris* using *lam1* bladeless mutant

STF proteins	Length/width ratio of the biggest leaf					plants examined
	>25	10-25	5-10	2.5-5	<2.5	
<i>STF</i>	0	0	0	0	12	12
<i>lam1</i>	10	0	0	0	0	10
<i>STF R96A</i>	0	7	2	2	0	11
<i>STF R113Q</i>	0	0	0	3	8	11
<i>STF K155A R156A R157A</i>	0	0	0	8	3	11
<i>STF R113Q K155A R156A R157A</i>	0	0	7	4	1	12
<i>STF R151A</i>	0	0	10	3	0	13
<i>STF N147I</i>	10	0	0	0	0	10
<i>STF F142Y Y143N</i>	0	0	2	10	2	14

Plants were measured after 6 weeks of growth in the greenhouse. Leaves with length/width ratio over 25 were without any complementation, while leaves with length/width less than 2.5 were complemented to that level of wild type plants.

Table S3 Known target promoters for AtWUS and STF

Known AtWUS targets:

AtCLV3 promoter (<https://doi.org/10.1073/pnas.1607669113>)

CCGTTGGGAAATTTATTAGTACGTTCAATTGTCAATGCAAATAATTAATGC

AtAG promoter ([https://doi.org/10.1016/S0092-8674\(01\)000384-1](https://doi.org/10.1016/S0092-8674(01)000384-1))

AGAGACAAAAA**ATT**ATAAGGATACTAAATTG**TTC**A TATTCTTGGAGTAAAAGATT

APBZ promoter (<https://doi.org/10.1038/nature04370>)

ARR7 promoter (<https://doi.org/10.1038/nature04270>)

TTTCATGTTGACACTTATTAGGATCGATAAATACGTTTAAATTGATTGAAACCAAATAACATGTAATTGCCTTAGTCCCTTGCAATTGTTAGAAGATGTTATGATGAGACAAAA

AtHEC1 promoter (<https://doi.org/10.1016/j.devcel.2014.01.013>)

TTGATAATCTTTACTCCAGCTATTATGAAACCTAATTGACCTTTTCACATACAAAAGTGTGATTATGAAATGAAATACAATATAATGGTG

STF targets:

MtAS2 promoter (<https://doi.org/10.1105/tpc.113.121947>)

CCGATTAATGGATCAGTTCTATTCCCTTTATAATTTCATTACCATGTTAACAAACAAAAACATGGTGAATGCATCACAGAAAATTATGGTAGTGTAAGAGAGAGAGAGACAGA

MtWOX9 promoter (<https://doi.org/10.1111/nph.16934>)

ATATATTCCATATTT**ATTA**TGATATATAAACTTTCATCTTACATTAA**TAAT**TGTTAAATAAATTCTTTACTACTAAATAATGA**ATT**ATGGTATTATTGCAATTATTA

Mtl QB39 promoter (this study)

TGTAGAAATTTTTTTTATCTTATGATAATGAAATTGATAATTCATTTCAATTACAGTATTAATTATCAGTTCAATTATCAGTTAATTATCAGTTAATTATCAGTTA