

Supplementary Table S1. The list of NLR genes in *Arabidopsis thaliana*

NLR genes	TNL genes	CNL genes	Paired NLR genes	Paired NLR proteins	DNA strand orientation
AT1G10920	AT1G17600	AT1G12210	AT1G17600	AT2G17050.1	-
AT1G12210	AT1G17610	AT1G12220	AT1G17610	AT2G17060.1	+
AT1G12220	AT1G27170	AT1G12280	AT1G56510		
AT1G12280	AT1G27180	AT1G12290	AT1G56520	AT2G17050.1	-
AT1G12290	AT1G31540	AT1G15890	AT1G56540	AT2G17060.2	+
AT1G15890	AT1G56510	AT1G50180	AT1G72840		
AT1G17600	AT1G56520	AT1G51480	AT1G72850	AT2G17050.2	-
AT1G17610	AT1G56540	AT1G52660	AT1G72860	AT2G17060.1	+
AT1G27170	AT1G63730	AT1G53350	AT1G72870		
AT1G27180	AT1G63740	AT1G58390	AT1G72890	AT2G17050.2	-
AT1G31540	AT1G63750	AT1G58400	AT2G17050	AT2G17060.2	+
AT1G33560	AT1G63860	AT1G58410	AT2G17060		
AT1G50180	AT1G63870	AT1G58602	AT3G14460	AT2G17050.3	-
AT1G51480	AT1G63880	AT1G58807	AT3G14470	AT2G17060.1	+
AT1G52660	AT1G64070	AT1G58848	AT3G51560		
AT1G53350	AT1G65850	AT1G59124	AT3G51570	AT2G17050.3	-
AT1G56510	AT1G66090	AT1G59218	AT4G09420	AT2G17060.2	+
AT1G56520	AT1G69550	AT1G59620	AT4G09430		
AT1G56540	AT1G72840	AT1G59780	AT4G12010	AT4G09420.1	-
AT1G58390	AT1G72850	AT1G61180	AT4G12020	AT4G09430.1	+
AT1G58400	AT1G72860	AT1G61190	AT4G16960		
AT1G58410	AT1G72870	AT1G61310	AT4G16990	AT4G12010.1	-
AT1G58602	AT1G72890	AT1G62630	AT4G19500	AT4G12020.6	+
AT1G58807	AT1G72950	AT1G63350	AT4G19510		
AT1G58848	AT2G14080	AT1G63360	AT4G19520	AT4G12010.1	-
AT1G59124	AT2G16870	AT2G17060	AT4G19530	AT4G12020.8	+
AT1G59218	AT2G17060	AT3G07040	AT4G36140		
AT1G59620	AT3G04210	AT3G14470	AT4G36150	AT4G12010.1	-
AT1G59780	AT3G04220	AT3G46530	AT5G17880	AT4G12020.4	+
AT1G61180	AT3G25505	AT3G46710	AT5G17890		
AT1G61190	AT3G25510	AT3G46730	AT5G40060	AT4G12010.1	-
AT1G61300	AT3G44400	AT3G50950	AT5G40090	AT4G12020.11	+
AT1G61310	AT3G44480	AT3G51570	AT5G40100		
AT1G62630	AT3G44630	AT4G08450	AT5G45050	AT4G12010.1	-
AT1G63350	AT3G44670	AT4G09420	AT5G45060	AT4G12020.3	+
AT1G63360	AT3G51560	AT4G10780	AT5G45200		
AT1G63730	AT3G51570	AT4G16990	AT5G45210	AT4G12010.1	-
AT1G63740	AT4G08450	AT4G19530	AT5G45230	AT4G12020.1	+
AT1G63750	AT4G09420	AT4G27190	AT5G45240		
AT1G63860	AT4G09430	AT4G27220	AT5G45250	AT4G12010.1	-
AT1G63870	AT4G11170	AT5G05400	AT5G45260	AT4G12020.9	+
AT1G63880	AT4G12010	AT5G17880	AT5G47250		
AT1G64070	AT4G12020	AT5G35450	AT5G47260	AT4G12010.1	-
AT1G65850	AT4G14370	AT5G43470	AT5G47280	AT4G12020.2	+
AT1G66090	AT4G16860	AT5G43730	AT5G48770		
AT1G69550	AT4G16890	AT5G43740	AT5G48780	AT4G12010.1	-
AT1G72840	AT4G16900	AT5G45200		AT4G12020.10	+
AT1G72850	AT4G16920	AT5G47250			
AT1G72860	AT4G16940	AT5G47260		AT4G12010.1	-
AT1G72870	AT4G16950	AT5G48620		AT4G12020.7	+
AT1G72890	AT4G16960	AT5G63020			
AT1G72950	AT4G16990	AT5G66900		AT4G12010.1	-
AT2G14080	AT4G19500			AT4G12020.5	+
AT2G16870	AT4G19510				
AT2G17050	AT4G19520			AT4G16960.1	-
AT2G17060	AT4G19530			AT4G16990.8	+
AT3G04210	AT4G36140				
AT3G04220	AT4G36150			AT4G16960.1	-
AT3G07040	AT5G11250			AT4G16990.9	+

AT3G14460	AT5G17680		
AT3G14470	AT5G17880	AT4G16960.1	-
AT3G15700	AT5G17890	AT4G16990.13	+
AT3G25505	AT5G17970		
AT3G25510	AT5G18350	AT4G16960.1	-
AT3G44400	AT5G18360	AT4G16990.2	+
AT3G44480	AT5G18370		
AT3G44630	AT5G22690	AT4G16960.1	-
AT3G44670	AT5G36930	AT4G16990.11	+
AT3G46530	AT5G38340		
AT3G46710	AT5G38850	AT4G16960.1	-
AT3G46730	AT5G40090	AT4G16990.6	+
AT3G50950	AT5G40100		
AT3G51560	AT5G40910	AT4G16960.1	-
AT3G51570	AT5G41540	AT4G16990.1	+
AT4G08450	AT5G41550		
AT4G09360	AT5G41740	AT4G16960.1	-
AT4G09420	AT5G41750	AT4G16990.12	+
AT4G09430	AT5G44510		
AT4G10780	AT5G44870	AT4G16960.1	-
AT4G11170	AT5G45050	AT4G16990.7	+
AT4G12010	AT5G45060		
AT4G12020	AT5G45200	AT4G16960.1	-
AT4G14370	AT5G45210	AT4G16990.10	+
AT4G16860	AT5G45230		
AT4G16890	AT5G45240	AT4G16960.1	-
AT4G16900	AT5G45250	AT4G16990.17	+
AT4G16920	AT5G45260		
AT4G16940	AT5G46260	AT4G19500.1	+
AT4G16950	AT5G46270	AT4G19520.1	-
AT4G16960	AT5G46450		
AT4G16990	AT5G46470	AT4G19500.2	+
AT4G19050	AT5G46490	AT4G19520.1	-
AT4G19500	AT5G46510		
AT4G19510	AT5G46520	AT4G19510.4	+
AT4G19520	AT5G48770	AT4G19520.1	-
AT4G19530	AT5G48780		
AT4G26090	AT5G49140	AT4G19510.4	+
AT4G27190	AT5G51630	AT4G19520.2	-
AT4G27220	AT5G58120		
AT4G33300		AT4G19510.4	+
AT4G36140		AT4G19520.4	-
AT4G36150			
AT5G04720		AT4G19510.4	+
AT5G05400		AT4G19520.3	-
AT5G11250			
AT5G17680		AT4G19510.4	+
AT5G17880		AT4G19520.5	-
AT5G17890			
AT5G17970		AT4G19510.5	+
AT5G18350		AT4G19520.1	-
AT5G18360			
AT5G18370		AT4G19510.5	+
AT5G22690		AT4G19520.2	-
AT5G35450			
AT5G36930		AT4G19510.5	+
AT5G38340		AT4G19520.4	-
AT5G38350			
AT5G38850		AT4G19510.5	+
AT5G40060		AT4G19520.3	-
AT5G40090			

AT5G40100	AT4G19510.5	+
AT5G40910	AT4G19520.5	-
AT5G41540		
AT5G41550	AT4G19510.7	+
AT5G41740	AT4G19520.1	-
AT5G41750		
AT5G43470	AT4G19510.7	+
AT5G43730	AT4G19520.2	-
AT5G43740		
AT5G44510	AT4G19510.7	+
AT5G44870	AT4G19520.4	-
AT5G45050		
AT5G45060	AT4G19510.7	+
AT5G45200	AT4G19520.3	-
AT5G45210		
AT5G45230	AT4G19510.7	+
AT5G45240	AT4G19520.5	-
AT5G45250		
AT5G45260	AT4G19510.9	+
AT5G46260	AT4G19520.1	-
AT5G46270		
AT5G46450	AT4G19510.9	+
AT5G46470	AT4G19520.2	-
AT5G46490		
AT5G46510	AT4G19510.9	+
AT5G46520	AT4G19520.4	-
AT5G47250		
AT5G47260	AT4G19510.9	+
AT5G47280	AT4G19520.3	-
AT5G48620		
AT5G48770	AT4G19510.9	+
AT5G48780	AT4G19520.5	-
AT5G49140		
AT5G51630	AT4G19510.3	+
AT5G58120	AT4G19520.1	-
AT5G63020		
AT5G66900	AT4G19510.3	+
AT5G66910	AT4G19520.2	-
	AT4G19510.3	+
	AT4G19520.4	-
	AT4G19510.3	+
	AT4G19520.3	-
	AT4G19510.3	+
	AT4G19520.5	-
	AT4G19510.6	+
	AT4G19520.1	-
	AT4G19510.6	+
	AT4G19520.2	-
	AT4G19510.6	+
	AT4G19520.4	-
	AT4G19510.6	+
	AT4G19520.3	-
	AT4G19510.6	+

AT4G19520.5	-
AT4G19510.1	+
AT4G19520.1	-
AT4G19510.1	+
AT4G19520.2	-
AT4G19510.1	+
AT4G19520.4	-
AT4G19510.1	+
AT4G19520.3	-
AT4G19510.1	+
AT4G19520.5	-
AT4G19510.8	+
AT4G19520.1	-
AT4G19510.8	+
AT4G19520.2	-
AT4G19510.8	+
AT4G19520.4	-
AT4G19510.8	+
AT4G19520.3	-
AT4G19510.8	+
AT4G19520.5	-
AT4G19510.2	+
AT4G19520.1	-
AT4G19510.2	+
AT4G19520.2	-
AT4G19510.2	+
AT4G19520.4	-
AT4G19510.2	+
AT4G19520.3	-
AT4G19510.2	+
AT4G19520.5	-
AT4G19510.10	+
AT4G19520.1	-
AT4G19510.10	+
AT4G19520.2	-
AT4G19510.10	+
AT4G19520.4	-
AT4G19510.10	+
AT4G19520.3	-
AT4G19510.10	+
AT4G19520.5	-

AT4G19520.1	-
AT4G19530.1	+
AT4G19520.1	-
AT4G19530.2	+
AT4G19520.2	-
AT4G19530.1	+
AT4G19520.2	-
AT4G19530.2	+
AT4G19520.4	-
AT4G19530.1	+
AT4G19520.4	-
AT4G19530.2	+
AT4G19520.3	-
AT4G19530.1	+
AT4G19520.3	-
AT4G19530.2	+
AT4G19520.5	-
AT4G19530.1	+
AT4G19520.5	-
AT4G19530.2	+
AT4G36140.2	-
AT4G36150.1	+
AT4G36140.1	-
AT4G36150.1	+
AT1G17600.1	-
AT1G17610.1	+
AT1G17600.1	-
AT1G17610.2	+
AT1G56510.1	+
AT1G56520.2	-
AT1G56510.1	+
AT1G56520.4	-
AT1G56510.1	+
AT1G56520.1	-
AT1G56510.1	+
AT1G56520.3	-
AT1G56510.1	+
AT1G56520.5	-
AT1G56520.2	-
AT1G56540.1	+

AT1G56520.2	-
AT1G56540.2	+
AT1G56520.4	-
AT1G56540.1	+
AT1G56520.4	-
AT1G56540.2	+
AT1G56520.1	-
AT1G56540.1	+
AT1G56520.1	-
AT1G56540.2	+
AT1G56520.3	-
AT1G56540.1	+
AT1G56520.3	-
AT1G56540.2	+
AT1G56520.5	-
AT1G56540.1	+
AT1G56520.5	-
AT1G56540.2	+
AT1G72840.4	-
AT1G72850.1	+
AT1G72840.4	-
AT1G72870.1	+
AT1G72840.2	-
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AT1G72840.2	-
AT1G72870.1	+
AT1G72840.3	-
AT1G72850.1	+
AT1G72840.3	-
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AT1G72840.1	-
AT1G72850.1	+
AT1G72840.1	-
AT1G72870.1	+
AT1G72850.1	+
AT1G72860.2	-
AT1G72850.1	+
AT1G72860.3	-
AT1G72850.1	+
AT1G72860.1	-
AT1G72860.2	-

AT1G72870.1	+
AT1G72860.2	-
AT1G72890.2	+
AT1G72860.2	-
AT1G72890.1	+
AT1G72860.3	-
AT1G72870.1	+
AT1G72860.3	-
AT1G72890.2	+
AT1G72860.3	-
AT1G72890.1	+
AT1G72860.1	-
AT1G72870.1	+
AT1G72860.1	-
AT1G72890.2	+
AT1G72860.1	-
AT1G72890.1	+
AT3G14460.1	-
AT3G14470.1	+
AT3G14460.1	-
AT3G14470.2	+
AT3G51560.1	-
AT3G51570.2	+
AT3G51560.1	-
AT3G51570.1	+
AT5G17880.1	-
AT5G17890.1	+
AT5G17880.2	-
AT5G17890.1	+
AT5G40060.1	+
AT5G40090.1	-
AT5G40060.2	+
AT5G40090.1	-
AT5G40090.1	-
AT5G40100.1	+
AT5G45050.1	-
AT5G45060.1	+
AT5G45050.1	-
AT5G45060.2	+
AT5G45050.4	-
AT5G45060.1	+

AT5G45050.4	-
AT5G45060.2	+
AT5G45050.2	-
AT5G45060.1	+
AT5G45050.2	-
AT5G45060.2	+
AT5G45050.3	-
AT5G45060.1	+
AT5G45050.3	-
AT5G45060.2	+
AT5G45200.2	-
AT5G45210.4	+
AT5G45200.2	-
AT5G45210.3	+
AT5G45200.2	-
AT5G45210.2	+
AT5G45200.2	-
AT5G45210.5	+
AT5G45200.2	-
AT5G45210.1	+
AT5G45200.1	-
AT5G45210.4	+
AT5G45200.1	-
AT5G45210.3	+
AT5G45200.1	-
AT5G45210.2	+
AT5G45200.1	-
AT5G45210.5	+
AT5G45200.1	-
AT5G45210.1	+
AT5G45200.3	-
AT5G45210.4	+
AT5G45200.3	-
AT5G45210.3	+
AT5G45200.3	-
AT5G45210.2	+
AT5G45200.3	-
AT5G45210.5	+
AT5G45200.3	-
AT5G45210.1	+



AT5G45210.4	+
AT5G45230.1	-
AT5G45210.3	+
AT5G45230.1	-
AT5G45210.2	+
AT5G45230.1	-
AT5G45210.5	+
AT5G45230.1	-
AT5G45210.1	+
AT5G45230.1	-
AT5G45230.1	-
AT5G45240.2	+
AT5G45230.1	-
AT5G45240.1	+
AT5G45240.2	+
AT5G45250.1	-
AT5G45240.1	+
AT5G45250.1	-
AT5G45250.1	-
AT5G45260.2	+
AT5G45250.1	-
AT5G45260.3	+
AT5G45250.1	-
AT5G45260.1	+
AT5G47250.1	-
AT5G47260.1	+
AT5G47250.1	-
AT5G47280.1	+
AT5G48770.1	-
AT5G48780.1	+
AT5G48770.1	-
AT5G48780.2	+

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