

1 **SUPPLEMENTAL DATA**

2 **Supplemental table 1.** Number of true positives and false negatives based on the 17
 3 characterized miPs (Supplemental table 2) found with different e-value parameters. Highlighted
 4 row has the best performance and its parameters were set as default in miP3.

Param 1: e-value all	Param 2: e-value small	Param 3: e-value reblast	true positive	false negative	Recall	Number of predicted miPs
1e-7	0.5	0.1	10	7	0.59	875
1e-6	0.5	0.1	10	7	0.59	891
1e-5	0.5	0.1	10	7	0.59	915
1e-5	0.5	0.1	10	7	0.59	915
1e-6	1	0.1	10	7	0.59	920
1e-5	1	0.1	10	7	0.59	944
1e-7	0.1	0.01	9	8	0.53	770
1e-7	0.5	0.01	9	8	0.53	774
1e-7	1	0.01	9	8	0.53	775
1e-6	0.1	0.01	9	8	0.53	786
1e-6	0.1	0.01	9	8	0.53	786
1e-6	0.5	0.01	9	8	0.53	790
1e-6	1	0.01	9	8	0.53	791
1e-5	0.1	0.01	9	8	0.53	810
1e-5	1	0.01	9	8	0.53	815
1e-6	0.1	0.1	9	8	0.53	815
1e-6	0.1	0.1	9	8	0.53	815
1e-4	0.1	0.01	9	8	0.53	824
1e-4	0.1	0.01	9	8	0.53	824
1e-4	1	0.01	9	8	0.53	829
1e-7	0.5	1e-5	8	9	0.47	718
1e-7	1	1e-5	8	9	0.47	718
1e-7	0.1	1e-5	8	9	0.47	718
1e-7	0.1	1e-5	8	9	0.47	718
1e-7	0.1	1e-4	8	9	0.47	732
1e-7	0.1	1e-4	8	9	0.47	732

1e-7	0.5	1e-4	8	9	0.47	732
1e-6	0.1	1e-5	8	9	0.47	734
1e-6	1	1e-5	8	9	0.47	734
1e-7	0.1	1e-3	8	9	0.47	743
1e-6	0.1	1e-4	8	9	0.47	748
1e-6	0.5	1e-4	8	9	0.47	748
1e-6	0.5	1e-4	8	9	0.47	748
1e-6	1	1e-4	8	9	0.47	748
1e-6	0.1	1e-3	8	9	0.47	759
1e-5	1	1e-5	8	9	0.47	759
1e-5	0.5	1e-5	8	9	0.47	759
1e-5	0.5	1e-5	8	9	0.47	759
1e-6	1	1e-3	8	9	0.47	759
1e-5	0.1	1e-4	8	9	0.47	773
1e-5	0.1	1e-4	8	9	0.47	773
1e-5	1	1e-4	8	9	0.47	773
1e-5	0.5	1e-4	8	9	0.47	773
1e-4	0.5	1e-5	8	9	0.47	774
1e-4	0.1	1e-5	8	9	0.47	774
1e-4	1	1e-5	8	9	0.47	774
1e-4	0.5	1e-5	8	9	0.47	774
1e-4	0.1	1e-5	8	9	0.47	774
1e-4	1	1e-5	8	9	0.47	774
1e-5	0.1	1e-3	8	9	0.47	783
1e-5	1	1e-3	8	9	0.47	783
1e-4	0.1	1e-4	8	9	0.47	787
1e-4	0.5	1e-4	8	9	0.47	787
1e-4	0.5	1e-4	8	9	0.47	787
1e-4	1	1e-4	8	9	0.47	787
1e-4	0.5	1e-3	8	9	0.47	797
1e-4	0.1	1e-3	8	9	0.47	797
1e-4	0.1	1e-3	8	9	0.47	797
1e-4	1	1e-23	6	11	0.35	763
1e-4	1	1e-23	6	11	0.35	763

1e-4	0.1	1e-23	6	11	0.35	763
1e-7	0.5	1e-23	5	12	0.29	691
1e-7	0.5	1e-23	5	12	0.29	691
1e-7	0.1	1e-23	5	12	0.29	691
1e-7	1	1e-23	5	12	0.29	691
1e-6	1	1e-23	5	12	0.29	710
1e-6	1	1e-23	5	12	0.29	710
1e-6	0.1	1e-23	5	12	0.29	710
1e-5	0.5	1e-23	5	12	0.29	738
1e-5	0.5	1e-23	5	12	0.29	738
1e-5	0.1	1e-23	5	12	0.29	738

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1 **Supplemental table 2.** *A. thaliana* miPs that have been characterized in the literature or that
2 have been tested in yeast two hybrid assays in a previous study [2]. Green: known or putative
3 miPs detected by miP3. Yellow: A known miP not detected by miP3 because the protein
4 sequence is not available in the TAIR database [15]. Red: A known miP not detected by miP3
5 because it is too divergent in sequence from any TF. Orange: bHLH miP not detected by miP3
6 because they contain the bHLH domain (IPR011598) but are missing the basic residues
7 upstream of the HLH domain.

Locus name	Previously characterized	Predicted by miP3	Physically interacts	Gene name (Reference)
At1G14760	Yes	Yes		KNATM [6, 7]
AT2G45450	Yes	No		LITTLE ZIPPER 1 [4, 5]
AT3G60890	Yes	Yes		LITTLE ZIPPER 2 [4, 5]
AT3G52770	Yes	Yes		LITTLE ZIPPER 3 [4, 5]
AT2G36307	Yes	No		LITTLE ZIPPER 4 [4, 5]
AT1G74660	Yes	Yes		MINI ZINC FINGER 1 [16]
AT3G28917	Yes	Yes		MINI ZINC FINGER 2 [16]
AT1G18835	Yes	Yes		MINI ZINC FINGER 3 [16]
AT2G42870	Yes	Yes		PHYTOCHROME RAPIDLY REGULATED1 [17, 18]
AT3G58850	Yes	Yes		PHYTOCHROME RAPIDLY REGULATED2 [17, 18]
AT1G02340	Yes	No		LONG HYPOCOTYL IN FR 1 [19]
AT1G74500	Yes	No		ACTIVATION-TAGGED BRI1-SUPPRESSOR 1 [21]
AT3G05800	Yes	No		ATBS1-INTERACTING FACTOR 1 [21]
AT5G39860	Yes	No		PACLOBUTRAZOL RESISTANCE1 [22]
AT1G26945	Yes	No		KIDARI [23]
AT5G07260*	Yes	Yes		LITTLE SIPPER [2]
AT1G09950	Yes	Yes		RESPONSE TO ABA AND SALT 1 [2]
AT1G15215	No	Yes	Yes [2]	Uncharacterized
AT3G19550	No	Yes	Yes [2]	Uncharacterized
AT1G61200	No	Yes	No [2]	Uncharacterized
AT3G19530	No	Yes	No [2]	Uncharacterized
AT1G20280	No	Yes	No [2]	Uncharacterized

8 *LITTLE SIPPER's locus name was misprinted as AT4G26920 in [2]. AT4G26920 is a paralog of LITTLE
9 SIPPER. Corrections will be published in Plant Physiology.