

**Supplementary Table 1.** miRNA targeted prediction of *HvlecRLKs*. The miRNA data was downloaded from the plant micro-RNA encyclopedia (<http://pmiren.com/>).

miRNA ID	Target ID	Target length	Target start	Target end	miRNA_aligned_fragment
hvu-miR6204	<i>HvleckRLK1</i>	22	29	50	AGGAGAAUAAUUAGAGCUGUGA
hvu-miR5048a	<i>HvleckRLK1</i>	22	1945	1966	UAUUUGCAGGUUUUAGGUCUAA
hvu-miR5048b	<i>HvleckRLK1</i>	22	1945	1966	UAUUUGCAGGUUUUAGGUCUAA
hvu-miR6195	<i>HvleckRLK1</i>	21	2206	2226	UGAGUACGUAGUAGGGAUGAG
hvu-miR6192	<i>HvleckRLK10</i>	22	27	48	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6214	<i>HvleckRLK100</i>	20	408	427	CGACGACGACGAGCACGACA
hvu-miR169	<i>HvleckRLK101</i>	21	762	782	AAGCCAAGGAUGAGUUGCCUG
hvu-miR6184	<i>HvleckRLK101</i>	22	1190	1211	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6184	<i>HvleckRLK102</i>	22	1193	1214	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6198	<i>HvleckRLK102</i>	22	701	722	GCUCUGUCUUGGAUGGUCAUUC
hvu-miR6196	<i>HvleckRLK103</i>	21	299	319	AGGACGAGGAGAUGGAGAGGA
hvu-miR6203	<i>HvleckRLK104</i>	22	1720	1741	AGACGAUUAAGAAGACCUGCAA
hvu-miR6208	<i>HvleckRLK104</i>	22	1293	1314	GUGCAUCAAGAUCGGCUCAUCU
hvu-miR6214	<i>HvleckRLK105</i>	20	24	43	CGACGACGACGAGCACGACA
hvu-miR6196	<i>HvleckRLK106</i>	21	263	284	AGGACG-AGGAGAUGGAGAGGA
hvu-miR6208	<i>HvleckRLK107</i>	22	655	676	GUGCAUCAAGAUCGGCUCAUCU
hvu-miR168-5p	<i>HvleckRLK108</i>	21	1121	1141	UCGCUUGGUGCAGAUCCGGAC
hvu-miR6192	<i>HvleckRLK108</i>	22	7	28	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6214	<i>HvleckRLK109</i>	20	717	738	CGACGACGACGAGCA--CGACA
hvu-miR6192	<i>HvleckRLK11</i>	22	3	24	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR159a	<i>HvleckRLK11</i>	21	2366	2386	UUUGGAUUGAAGGGAGCUCUG
hvu-miR159b	<i>HvleckRLK11</i>	21	2366	2386	UUUGGAUUGAAGGGAGCUCUG
hvu-miR6196	<i>HvleckRLK111</i>	21	677	697	AGGACGAGGAGAUGGAGAGGA
hvu-miR159a	<i>HvleckRLK12</i>	21	2312	2332	UUUGGAUUGAAGGGAGCUCUG
hvu-miR159b	<i>HvleckRLK12</i>	21	2312	2332	UUUGGAUUGAAGGGAGCUCUG
hvu-miR6196	<i>HvleckRLK13</i>	21	143	163	AGGACGAGGAGAUGGAGAGGA
hvu-miR6198	<i>HvleckRLK13</i>	22	374	395	GCUCUGUCUUGGAUGGUCAUUC
hvu-miR6214	<i>HvleckRLK13</i>	20	2333	2352	CGACGACGACGAGCACGACA
hvu-miR168-5p	<i>HvleckRLK13</i>	21	1036	1056	UCGCUUGGUGCAGAUCCGGAC
hvu-miR5053	<i>HvleckRLK13</i>	21	941	961	CGCAGCUGUAGUCGCCGGCGU
hvu-miR6181	<i>HvleckRLK13</i>	23	1011	1033	UGCUCUUCAUGGACUGCGGCGCC
hvu-miR6187	<i>HvleckRLK13</i>	21	704	724	UGAACAGGUUCGGCGACCUCA
hvu-miR6189	<i>HvleckRLK13</i>	20	257	276	AGGUGAUGCUGUGGUGAUCU
hvu-miR6196	<i>HvleckRLK14</i>	21	87	107	AGGACGAGGAGAUGGAGAGGA
hvu-miR159a	<i>HvleckRLK14</i>	21	1829	1849	UUUGGAUUGAAGGGAGCUCUG
hvu-miR159b	<i>HvleckRLK14</i>	21	1829	1849	UUUGGAUUGAAGGGAGCUCUG
hvu-miR6179	<i>HvleckRLK14</i>	22	59	80	AACCAGUCGAGGCCAGGGGGUU
hvu-miR6184	<i>HvleckRLK15</i>	22	524	545	CGGCGUCGGAUCUGGCCGGCCU

Supplementary Table 1 (Continued)

miRNA ID	Target ID	Target length	Target start	Target end	miRNA_aligned_fragment
hvu-miR6189	<i>HyleckRLK18</i>	20	1977	1995	AGGUGAUGCUGUGGUGAUCU
hvu-miR6184	<i>HyleckRLK2</i>	22	322	343	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR5051	<i>HyleckRLK2</i>	21	1089	1109	UUUGGCACCUUGAAACUGGGA
hvu-miR6189	<i>HyleckRLK20</i>	20	123	142	AGGUGAUGCUGUGGUGAUCU
hvu-miR397b-3p	<i>HyleckRLK21</i>	21	1060	1080	AUCAACGCUGCACUCAACGGC
hvu-miR6195	<i>HyleckRLK23</i>	21	1239	1258	UGAGUACGUAGUAGGGAUGAG
hvu-miR5053	<i>HyleckRLK27</i>	21	1178	1198	CGCAGCUGUAGUCGCCGGCGU
hvu-miR5051	<i>HyleckRLK27</i>	21	2217	2237	UUUGGCACCUUGAAACUGGGA
hvu-miR6192	<i>HyleckRLK27</i>	22	31	51	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6191	<i>HyleckRLK28</i>	20	901	920	UAGAUUUGUCUAGAUUAUGAA
hvu-miR166a	<i>HyleckRLK31</i>	21	1784	1804	UCGGACCAGGCUUCAUUCCCC
hvu-miR166b	<i>HyleckRLK31</i>	21	1784	1804	UCGGACCAGGCUUCAUUCCCC
hvu-miR166c	<i>HyleckRLK31</i>	21	1784	1804	UCGGACCAGGCUUCAUUCCCC
hvu-miR6207	<i>HyleckRLK31</i>	21	8	28	UGGACGACCUGGGCGCCGACG
hvu-miR6202	<i>HyleckRLK32</i>	20	159	178	UGAAGAUUUUAAGCAUUGAA
hvu-miR1120	<i>HyleckRLK32</i>	24	1599	1622	ACAUUCUUAUAUUAUGGGACGGAG
hvu-miR1130	<i>HyleckRLK33</i>	21	1379	1399	UCUGUAACUUAUAUAAGACG
hvu-miR6202	<i>HyleckRLK33</i>	20	162	181	UGAAGAUUUUAAGCAUUGAA
hvu-miR6196	<i>HyleckRLK34</i>	21	224	244	AGGACGAGGAGAUGGAGAGGA
hvu-miR444b	<i>HyleckRLK34</i>	21	1052	1072	UGCAGUUGCUGUCUCAAGCUU
hvu-miR6182	<i>HyleckRLK34</i>	22	53	74	UGAGUGUGUGAUGGAUGGCUUU
hvu-miR6184	<i>HyleckRLK34</i>	22	337	358	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR5053	<i>HyleckRLK35</i>	21	1193	1213	CGCAGCUGUAGUCGCCGGCGU
hvu-miR6214	<i>HyleckRLK36</i>	20	1383	1402	CGACGACGACGAGCACGACA
hvu-miR171-5p	<i>HyleckRLK36</i>	21	846	867	UGUUGGCUCGACUCAC-UCAGA
hvu-miR6184	<i>HyleckRLK37</i>	22	881	902	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6207	<i>HyleckRLK37</i>	21	623	643	UGGACGACCUGGGCGCCGACG
hvu-miR5048a	<i>HyleckRLK39</i>	22	1185	1206	UAUUUGCAGGUUUUAGGUCUAA
hvu-miR5048b	<i>HyleckRLK39</i>	22	1185	1206	UAUUUGCAGGUUUUAGGUCUAA
hvu-miR6206	<i>HyleckRLK39</i>	22	954	975	GGCACACGGGCGCAGGCAUAG
hvu-miR6193	<i>HyleckRLK4</i>	23	507	530	CUCUGCCACCGGUC-CAUGACGAC
hvu-miR6184	<i>HyleckRLK42</i>	22	1517	1537	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6207	<i>HyleckRLK42</i>	21	1314	1334	UGGACGACCUGGGCGCCGACG
hvu-miR6207	<i>HyleckRLK42</i>	21	323	343	UGGACGACCUGGGCGCCGACG
hvu-miR5051	<i>HyleckRLK43</i>	21	678	698	UUUGGCACCUUGAAACUGGGA
hvu-miR169	<i>HyleckRLK44</i>	21	425	445	AAGCCAAGGAUGAGUUGCCUG
hvu-miR6184	<i>HyleckRLK44</i>	22	2092	2113	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6188	<i>HyleckRLK44</i>	22	2234	2255	GGUGGAUCGAUGAACCCGGCGA
hvu-miR6214	<i>HyleckRLK45</i>	20	447	465	CGACGACGACGAGCACGACA
hvu-miR6214	<i>HyleckRLK46</i>	20	1368	1387	CGACGACGACGAGCACGACA

Supplementary Table 1 (Continued)

miRNA ID	Target ID	Target length	Target start	Target end	miRNA_aligned_fragment
hvu-miR6214	<i>HvleckRLK46</i>	20	815	834	CGACGACGACGAGCACGACA
hvu-miR5052	<i>HvleckRLK46</i>	21	759	779	ACCGGCUGGACGGUAGGCAUA
hvu-miR6214	<i>HvleckRLK46</i>	20	2648	2667	CGACGACGACGAGCACGACA
hvu-miR6196	<i>HvleckRLK46</i>	21	1178	1198	AGGACGAGGAGAUGGAGAGGA
hvu-miR5048a	<i>HvleckRLK5</i>	22	1272	1293	UAUUUGCAGGUUUUAGGUCUAA
hvu-miR5048b	<i>HvleckRLK5</i>	22	1272	1293	UAUUUGCAGGUUUUAGGUCUAA
hvu-miR169	<i>HvleckRLK5</i>	21	224	245	AAGCCAAGGAUGAG-UUGCCUG
hvu-miR6198	<i>HvleckRLK50</i>	22	2370	2391	GCUCUGUCUUGGAUGGUCAUUC
hvu-miR6210	<i>HvleckRLK51</i>	22	2071	2092	ACUCCUUGGUUAUCAACUUCGA
hvu-miR6202	<i>HvleckRLK52</i>	20	304	323	UGAAGAUUUUAAGCAUUGAA
hvu-miR5053	<i>HvleckRLK54</i>	21	2123	2143	CGCAGCUGUAGUCGCCGGCGU
hvu-miR159a	<i>HvleckRLK55</i>	21	696	716	UUUGGAUUGAAGGGAGCUCUG
hvu-miR159b	<i>HvleckRLK55</i>	21	696	716	UUUGGAUUGAAGGGAGCUCUG
hvu-miR6192	<i>HvleckRLK55</i>	22	1279	1300	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6206	<i>HvleckRLK57</i>	22	89	110	GGCACACGGGCUGCAGGCAUAG
hvu-miR5053	<i>HvleckRLK58</i>	21	1562	1582	CGCAGCUGUAGUCGCCGGCGU
hvu-miR6194	<i>HvleckRLK58</i>	21	1280	1300	UAUGGGGAUCUGACAGACGAG
hvu-miR6214	<i>HvleckRLK58</i>	20	365	384	CGACGACGACGAGCACGACA
hvu-miR6185	<i>HvleckRLK59</i>	21	1071	1091	UCUGGCAGCGACGGGAACAUA
hvu-miR6196	<i>HvleckRLK6</i>	21	117	137	AGGACGAGGAGAUGGAGAGGA
hvu-miR6188	<i>HvleckRLK6</i>	22	2318	2339	GGUGGAUCGAUGAACCCGGCGA
hvu-miR6192	<i>HvleckRLK6</i>	22	117	138	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6182	<i>HvleckRLK60</i>	22	772	792	UGAGUGUGUGAUGGAUGGCUUU
hvu-miR5053	<i>HvleckRLK60</i>	21	2081	2101	CGCAGCUGUAGUCGCCGGCGU
hvu-miR6185	<i>HvleckRLK60</i>	21	357	377	UCUGGCAGCGACGGGAACAUA
hvu-miR444a	<i>HvleckRLK61</i>	21	2165	2185	UUGCUGCCUCAAGCUUGCUGC
hvu-miR5053	<i>HvleckRLK61</i>	21	1559	1579	CGCAGCUGUAGUCGCCGGCGU
hvu-miR6185	<i>HvleckRLK61</i>	21	1092	1112	UCUGGCAGCGACGGGAACAUA
hvu-miR6196	<i>HvleckRLK63</i>	21	43	63	AGGACGAGGAGAUGGAGAGGA
hvu-miR6192	<i>HvleckRLK63</i>	22	38	58	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6184	<i>HvleckRLK66</i>	22	1178	1199	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6192	<i>HvleckRLK66</i>	22	14	35	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6187	<i>HvleckRLK68</i>	21	350	370	UGAACAGGUUCGGCGACCUCA
hvu-miR6214	<i>HvleckRLK68</i>	20	723	741	CGACGACGACGAGCACGACA
hvu-miR6214	<i>HvleckRLK68</i>	20	906	925	CGACGACGACGAGCACGACA
hvu-miR6184	<i>HvleckRLK69</i>	22	1154	1175	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6208	<i>HvleckRLK7</i>	22	1291	1312	GUGCAUCAAGAUCGGCUCUUCU
hvu-miR6184	<i>HvleckRLK7</i>	22	112	133	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6196	<i>HvleckRLK71</i>	21	200	220	AGGACGAGGAGAUGGAGAGGA
hvu-miR6196	<i>HvleckRLK72</i>	21	349	370	AGGACGAGGAGAUG-GAGAGGA

Supplementary Table 1 (Continued)

miRNA ID	Target ID	Target length	Target start	Target end	miRNA_aligned_fragment
hvu-miR169	<i>HvleckRLK72</i>	21	783	803	AAGCCAAGGAUGAGUUGCCUG
hvu-miR6194	<i>HvleckRLK72</i>	21	741	761	UAUGGGGAUCUGACAGACGAG
hvu-miR6192	<i>HvleckRLK73</i>	22	210	231	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR169	<i>HvleckRLK74</i>	21	957	977	AAGCCAAGGAUGAGUUGCCUG
hvu-miR5052	<i>HvleckRLK74</i>	21	374	395	ACCGGCUUGGACGGUA-GGCAUA
hvu-miR6193	<i>HvleckRLK74</i>	23	343	367	CUCUGCCACCGGUC--CAUGACGAC
hvu-miR6184	<i>HvleckRLK78</i>	22	1193	1214	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6214	<i>HvleckRLK78</i>	20	726	744	CGACGACGACGAGCACGACA
hvu-miR6176	<i>HvleckRLK79</i>	23	2105	2127	GAAGCUGUAGUGCAGCCGGCGUU
hvu-miR6207	<i>HvleckRLK79</i>	21	296	316	UGGACGACCUGGGCGCCGACG
hvu-miR6198	<i>HvleckRLK79</i>	22	304	325	GCUCUGUCUUGGAUGGUCAUUC
hvu-miR6192	<i>HvleckRLK8</i>	22	23	44	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR1130	<i>HvleckRLK8</i>	21	1852	1872	UCUGUAAACUUAUAUAAGACG
hvu-miR399	<i>HvleckRLK81</i>	21	755	775	UGCCAAAGGAGAUUUGCCCCG
hvu-miR6196	<i>HvleckRLK82</i>	21	14	34	AGGACGAGGAGAUGGAGAGGA
hvu-miR159a	<i>HvleckRLK83</i>	21	1663	1682	UUUGGAUUGAAGGGAGCUCUG
hvu-miR159b	<i>HvleckRLK83</i>	21	1663	1682	UUUGGAUUGAAGGGAGCUCUG
hvu-miR168-5p	<i>HvleckRLK83</i>	21	1037	1057	UCGCUUGGUGCAGAUCCGGGAC
hvu-miR6196	<i>HvleckRLK83</i>	21	33	53	AGGACGAGGAGAUGGAGAGGA
hvu-miR159a	<i>HvleckRLK84</i>	21	1648	1667	UUUGGAUUGAAGGGAGCUCUG
hvu-miR159b	<i>HvleckRLK84</i>	21	1648	1667	UUUGGAUUGAAGGGAGCUCUG
hvu-miR168-5p	<i>HvleckRLK84</i>	21	1022	1042	UCGCUUGGUGCAGAUCCGGGAC
hvu-miR6196	<i>HvleckRLK84</i>	21	18	38	AGGACGAGGAGAUGGAGAGGA
hvu-miR6214	<i>HvleckRLK86</i>	20	924	943	CGACGACGACGAGCACGACA
hvu-miR6181	<i>HvleckRLK86</i>	23	1905	1926	UGCUCUUCAUGGACUGCGGCGCC
hvu-miR6193	<i>HvleckRLK86</i>	23	1294	1316	CUCUGCCACCGGUCCAUGACGAC
hvu-miR168-3p	<i>HvleckRLK87</i>	24	1100	1122	GAUCCCGCCUUGCACCAAGUGAAU
hvu-miR6184	<i>HvleckRLK87</i>	22	1108	1129	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6190	<i>HvleckRLK87</i>	21	406	426	CGAGGAAAGGAAGAAGCCAUG
hvu-miR6192	<i>HvleckRLK87</i>	22	341	362	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6214	<i>HvleckRLK88</i>	20	924	943	CGACGACGACGAGCACGACA
hvu-miR6181	<i>HvleckRLK88</i>	23	1905	1926	UGCUCUUCAUGGACUGCGGCGCC
hvu-miR6193	<i>HvleckRLK88</i>	23	1294	1316	CUCUGCCACCGGUCCAUGACGAC
hvu-miR6214	<i>HvleckRLK89</i>	20	36	55	CGACGACGACGAGCACGACA
hvu-miR6196	<i>HvleckRLK89</i>	21	1946	1966	AGGACGAGGAGAUGGAGAGGA
hvu-miR6196	<i>HvleckRLK9</i>	21	188	208	AGGACGAGGAGAUGGAGAGGA
hvu-miR6184	<i>HvleckRLK90</i>	22	634	655	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR5052	<i>HvleckRLK90</i>	21	1871	1891	ACCGGCUUGGACGGUAGGCAUA
hvu-miR6198	<i>HvleckRLK90</i>	22	687	708	GCUCUGUCUUGGAUGGUCAUUC
hvu-miR6214	<i>HvleckRLK91</i>	20	2003	2022	CGACGACGACGAGCACGACA

**Supplementary Table 1** (Continued)

miRNA ID	Target ID	Target length	Target start	Target end	miRNA_aligned_fragment
hvu-miR6192	<i>HvleckRLK91</i>	22	60	81	UAGGAGAGGGGGGAAGGGAUCU
hvu-miR6189	<i>HvleckRLK91</i>	20	549	568	AGGUGAUGCUGUGGUGAUCU
hvu-miR6207	<i>HvleckRLK91</i>	21	618	638	UGGACGACCUGGGCGCCGACG
hvu-miR6184	<i>HvleckRLK92</i>	22	1205	1226	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6214	<i>HvleckRLK92</i>	20	921	940	CGACGACGACGAGCACGACA
hvu-miR6186	<i>HvleckRLK93</i>	21	1640	1660	CGAGGAAGGCGCUGAGAGAGA
hvu-miR6214	<i>HvleckRLK93</i>	20	765	783	CGACGACGACGAGCACGACA
hvu-miR6198	<i>HvleckRLK94</i>	22	1343	1364	GCUCUGUCUUGGAUGGUCAUUC
hvu-miR6214	<i>HvleckRLK94</i>	20	297	316	CGACGACGACGAGCACGACA
hvu-miR6195	<i>HvleckRLK95</i>	21	337	357	UGAGUACGUAGUAGGGAUGAG
hvu-miR6190	<i>HvleckRLK96</i>	21	113	133	CGAGGAAAGGAAGAAGCCAUG
hvu-miR168-5p	<i>HvleckRLK96</i>	21	269	289	UCGCUUGGUGCAGAUCCGGAC
hvu-miR5053	<i>HvleckRLK96</i>	21	1178	1198	CGCAGCUGUAGUCGCCGGCGU
hvu-miR6184	<i>HvleckRLK96</i>	22	1212	1231	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6185	<i>HvleckRLK96</i>	21	2076	2096	UCUGGCAGCGACGGGAACAUA
hvu-miR6207	<i>HvleckRLK96</i>	21	1449	1469	UGGACGACCUGGGCGCCGACG
hvu-miR6214	<i>HvleckRLK96</i>	20	2075	2094	CGACGACGACGAGCACGACA
hvu-miR6184	<i>HvleckRLK97</i>	22	1132	1153	CGGCGUCGGAUCUGGCCGGCCU
hvu-miR6208	<i>HvleckRLK99</i>	22	1281	1302	GUGCAUCAAGAUCGGCUCAUCU
hvu-miR6214	<i>HvleckRLK99</i>	20	939	958	CGACGACGACGAGCACGACA
hvu-miR6214	<i>HvleckRLK99</i>	20	759	777	CGACGACGACGAGCACGACA