

**Appendix B** Information of CEP gene family in apple

Gene number	Gene accession No.	Chr.	Group	Locus	Number of amino acids	Molecular weight (Da)	Isoelectric point
MdCEP01	MDP0000232733	1	I	13282420 13290119	1125	125391.91	6.36
MdCEP02	MDP0000298042	1	I	13357162 13365183	1107	123464.55	5.77
MdCEP03	MDP0000234834	1	I	13396681 13404619	1100	122682.96	5.58
MdCEP04	MDP0000213875	2	I	15718769 15719128	119	12673.43	7.01
MdCEP05	MDP0000262843	2	I	22347897 22354892	931	103394.79	6.1
MdCEP06	MDP0000804928	5	II	5655478 5655885	135	14510.03	10.46
MdCEP07	MDP0000175173	5	I	13101331 13109851	961	106222.9	6.08
MdCEP08	MDP0000294440	5	I	13789259 13794894	351	39378.86	9.91
MdCEP09	MDP0000209283	6	III	1752160 1753911	583	62673.35	5.89
MdCEP10	MDP0000198205	6	II	10861167 10871109	999	110327.26	6.03

MdCEP11	MDP0000143462	8	II	489362 489984	191	19277.57	9.52
MdCEP12	MDP0000143463	8	I	492116 492730	204	20643.54	9.49
MdCEP13	MDP0000254055	10	II	27074849 27075139	96	10378.21	9.92
MdCEP14	MDP0000456916	11	III	28628503 28630208	346	34852.24	7.66
MdCEP15	MDP0000175519	12	III	18456244 18456606	120	12409.06	9.4
MdCEP16	MDP0000146517	15	I	2841121 2841411	96	10384.43	5.87
MdCEP17	MDP0000886456	15	I	23315492 23315917	141	15122.71	7.82
MdCEP18	MDP0000886459	15	I	23323929 23324294	121	12978.62	7.98
MdCEP19	MDP0000306151	15	II	24715719 24716189	156	16109.15	9.44
MdCEP20	MDP0000755258	15	I	39853701 39855779	652	71949.32	6.32
MdCEP21	MDP0000157932	15	III	43824239 43824778	180	19972.71	9.82
MdCEP22	MDP0000163728	16	III	7894056 7895054	332	36467.21	9.67
MdCEP23	MDP0000949494	16	III	7897065 7898063	332	undefined	undefined
MdCEP24	MDP0000303449	16	III	18209747 18210823	358	39224.93	9.5
MdCEP25	MDP0000770985	unanchored	I	25884410 25884688	92	9746.36	10.62
MdCEP26	MDP0000375783	unanchored	I	53902116 53902385	89	9088.43	8.99
MdCEP27	MDP0000836906	unanchored	I	75516896 75517678	214	23452.06	10.14

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