Supplementary material

Table S1. Molecular weight of polypeptide subunits of total proteins in seeds of different mungbean genotypes.

MOLECULAR WEIGHT(kDa)													
Band No	**Mungbean Genotypes**												
	Check Varieties					**MR interspecific lines**							
	SML 668	**SML 832**	**TMB 37**	**ML 818**	**ML 2056**	**SML 1809**	**SML 1825**	**SML 1827**	**SML 2015**	**SML 2016**	**SML 2031**	**SML 2032**	
1	160	160	-	-	160.2	161.2	162.0	-	-	-	160.0	-	
2	-	-	152.3	152.6	-	-	-	-	154.25	152.6	-	152.5	
3	135	135	127.4	131.5	125.27	136.7	138.2		132.7		133.6	131.5	
4	115.5	115	-	-	-	104.27	-	115.5	-	-	103.26	102.7	
5	-	-	97.10	93.6	94.45	-	95.66	-	93.27	-	-	-	
6	-	-	-	82.1	-	-	-	-	-	-	-	-	
7	67.0	66.8	-	-	-	69.49	-	59.34	-	63.5		76.26	
8	-	-	60.3	60.8	62	62	58.9		59.5	-	61.8	62	
9	49.0	49.0	-	49	-	-	-	-	-	-	-	-	
10	40	40	40.5	40.7	40.3	42.08	40.5	40.7	40.7	40.4	40.3	42.50	
11	35	36.0	34.40	36.04	33.88	36.72	36.72	34.6	36.15	36.3	34.40	35.56	
12	32	32.7	31.5	31.5	31.5		32.0	32.6	32.4	33.0	32.4	32.4	
13	25.0	24.0	25.4	23.1	23.3	23.6	23.9	24.0	24.1	24.6	23.7	24.6	
14	20.0	20.2	16.77	17.09	17.14	17.24	17.14	18.40	17.57	16.9	17.42	18.23	
15	15.0	14.8	13.4	13.3	13.4	13.3	13.3	13.5	13.7	13.7	13.9	14.3	

MOLECULAR WEIGHT(kDa)													
Band No.	**MU interspecific lines**												
	SML 1808	**SML 1817**	**SML 1820**	**SML 1822**	**SML 1829**	**SML 1839**	**SML 1930**	**SML 1932**	**SML 1933**	**SML 1941**	**SML 2011**	**SML 2033**	**SML 2034**
1	143.2	140.8	144.6	143.3	145.6	144.4	151.1	145.8	157.7	151.8	150.4	154.5	149.6
2	132.0	125.0	132.0	132.0	134.92	132.0	136.46	133.0	139.98	136.85	110.04	133.2	131.9
3	99.1	94.7	96.1	94.0	95.8	97.2	102.3	98.1	101.5	102.1	-	102.5	102.5
4	60.81	60.0	61.7	58.4	57.9	58.0	60.0	59.0	61.4	61.8	-	57.7	59.7
5	41.4	43.3	42.0	42.0	41.3	41.1	41.4	41.7	40.9	42.2	40.4	40.6	41.2
6	37.8	38.0	39.3	36.6	38.0	36.6	35.8	35.8	36.6	37.0	-	35.6	35.0
7	-	34.0	34.0	33.9	34.2	33.3	33.4	33.2	33.0	33.0	-	-	-
8	28.4	27.9	26.8	25.0	24.7	24.6	24.9	25.9	25.0	25.1	24.1	26.4	25.1
9	22.3	20.5	18.8	19.1	18.2	18.5	18.3	19.1	18.3	17.9	19.2	19.0	19.3
10	17.1	15.2	15.2	15.5	14.5	15.0	15.0	15.1	14.6	14.1	14.1	13.5	13.6

TableS2. Searched mungbean peptides with known molecular weights

S. No.	Accession No.	Mol. Wt. (kDa)	Protein Name	References
1	P01062	7.959	Bowman-Birk type trypsin inhibitor	Zhang, Y, Luo S, Tan F, QiZ, Xu L and Zhang A.(1982). Complete amino acid sequence of mung bean trypsin inhibitor. *Scientia Sinica. Series B, Chemical, Biological, Agricultural, Medical & Earth Sciences 25*(3): 268-277.
2	P83434	9.299	Non-specific lipid-transfer protein 1	Lin KF, Liu YN, Hsu STD, Samuel D, Cheng CS, Bonvin AM and Lyu PC. (2005). Characterization and structural analyses of nonspecific lipid transfer protein 1 from mung bean. *Biochemistry* 44(15): 5703-5712.
3	Q9FRT8	9.711	Albumin-1	Yamazaki T, Takaoka M, Katoh E, Hanada K, Sakita M, Sakata K, Nishiuchi Y and Hirano H. (2003). A possible physiological function and the tertiary structure of a 4- kDa peptide in legumes. *European journal of biochemistry* 270(6): 1269-1276.
4	P32295	10.212	Indole-3-acetic acid-induced protein ARG7	Yamamoto KT, Mori H and Imaseki H. (1992). cDNA cloning of indole-3-acetic acid-regulated genes: Aux22 and SAUR from mung bean (*Vigna radiata*) hypocotyl tissue. *Plant and cell physiology* 33(1): 93-97.
5	P32292	10.420	Indole-3-acetic acid-induced protein ARG2	Yamamoto KT, Mori H and Imaseki H. (1992). Novel mRNA sequences induced by indole-3-acetic acid in sections of elongating hypocotyls of mung bean (*Vigna radiata*). *Plant and cell physiology 33*(1): 13-20.
6	P00052	12.132	Cytochrome c	Thompson EW, Laycock MV, RamshawJAM and Boulter D.(1970). The amino acid sequence of *Phaseolus aureus*L.(mung-bean) cytochrome c. *Biochemical Journal* 117(1): 183-192.
7	Q9YPS3	15.219	Transcriptional activator protein	Karthikeyan AS, Vanitharani R, Balaji V, Anuradha S, Thillaichidambaram P, Shivaprasad PV, Parameswari C, Balamani V, Saminathan M and Veluthambi K.(2004). Analysis of an isolate of Mungbean yellow mosaic virus (MYMV) with a highly variable DNA B component. *Archives of virology* 149(8): 1643-1652.
8	O22552	16.528	V-type proton ATPase 16 kDa proteolipid subunit	Hung S and Pan R. (1997). V-type proton ATPase 16 kDaproteolipid subunit (https://www.uniprot.org/uniprot/O22552).
9		16	7S globulins	Mendoza EMT, Adachi M, Emiliana A, Bernardo N and Utsumi S. (2001). Mungbean [*Vigna radiata* (L.) Wilczek] globulins: purification and characterization. *Journal of Agricultural and Food Chemistry* 49(3): 1552-1558.
10		17	11S globulins	Malviya N, Nayak S and Yadav D. (2008). Characterization of total salt soluble seed storage proteins of grain legumesusing SDS-PAGE. *Bulletin de RessourcesPhytogénétiques*, 156: 50-56. Gangwar LK, Bajpai GC and Kerkhi SA.(2009). Seed protein studies on *Cajanus acutifolius* derived interspecific hybrids in pigeonpea. *Journal of Food Legumes* 22(1):23-25.
11	A0A1S3THR8	17.595	Phytohormone-binding protein CSBP	Fujimoto Y, Nagata R, Fukasawa H, Yano K, Azuma M, Iida A, Sugimoto S, Shudo K and Hashimoto Y. (1998). Purification and cDNA cloning of cytokinin- specific binding protein from mung bean (*Vigna radiata*). *European Journal of Biochemistry* 258(2): 794-802.
12	Q8W435	18.207	Peptidyl-prolyl cis-trans isomerase	Kaga A and M Ishimoto. (1998). Analysis of expressing genesaround bruchid resistance gene, Resubmitted (DEC-

				1998)to the EMBL/GenBank/DDBJ databases(https://www.uniprot.org/).
13	O24541	21.273	AUX22C	Hashimoto H and Yamamoto KT.(1997). Three more members of the Aux/IAA gene family from mung bean (Vigna radiata) hypocotyl. *Plant Physiology* 115: 315.
14	P32293	21.514	AUX22A	Yamamoto KT, Mori H and Imaseki H. (1992). cDNA cloning of indole-3-acetic acid-regulated genes: Aux22 and SAUR from mung bean (*Vigna radiata*) hypocotyl tissue. *Plant and cell physiology* 33(1): 93-97.
15	O24542	21.699	AUX22D	Hashimoto H and Yamamoto KT. (1997). Three more members of the Aux/IAA gene family from mung bean (*Vigna radiata*) hypocotyl. *Plant Physiology* 115: 315.
16	P32294	22.050	AUX22B	Yamamoto KT, Mori H and Imaseki H. (1992). cDNA cloning of indole-3-acetic acid-regulated genes: Aux22 and SAUR from mung bean (*Vigna radiata*) hypocotyl tissue. *Plant and cell physiology* 33(1): 93-97.
17	O24543	22.695	AUX22E	Hashimoto H and Yamamoto KT. (1997). Three more members of the Aux/IAA gene family from mung bean (*Vigna radiata*) hypocotyl. *Plant Physiology* 115: 315.
18	Q8W436	23.060	BPng110	Kaga A and Ishimoto M. (1998). Genetic localization of a bruchid resistance gene and its relationship to insecticidal cyclopeptide alkaloids, the vignatic acids, in mungbean (*Vigna radiata* L. Wilczek). *Molecular and General Genetics* 258(4): 378-384.
19		24	24kDa 11S globulins	Mendoza EMT, Adachi M, Emiliana A, Bernardo N and Utsumi S. (2001). Mungbean [*Vigna radiata* (L.) Wilczek] globulins: purification and characterization. *Journal of Agricultural and Food Chemistry* 49(3): 1552-1558.
20	Q8W437	25.277	PBng143	Kaga and Ishimoto (1998)Kaga, A. and Ishimoto, M., 1998. Genetic localization of a bruchid resistance gene and its relationship to insecticidal cyclopeptide alkaloids, the vignatic acids, in mungbean (Vigna radiata L. Wilczek). *Molecular and General Genetics MGG*, *258*(4), pp.378-384.
21		28	28 kDa 7S globulins	Mendoza EMT, Adachi M, Emiliana A, Bernardo N and Utsumi S. (2001). Mungbean [*Vigna radiata* (L.) Wilczek] globulins: purification and characterization. *Journal of Agricultural and Food Chemistry* 49(3): 1552-1558.
22		30	30 kDa (2S albumin) 16.5 S globulin	Freitas RL, Teixeira AR and Ferreira RB. (2004). Characterization of the proteins from *Vigna unguiculate*seeds. *Journal of Agricultural and Food Chemistry* 52(6):1682-1687. Tripathy SK, SuchinnataSS and Mishra PK. (2010). Analysisof seed storage protein pattern: a method for studyinggenetic variation and diversity among V*igna* genotypes. *TheIndian Journal of Genetics and Plant Breeding* 70(2):140-144.
23	Q43680	30.233	Mung bean seed albumin	Kang YJ, Kim SK, Kim MY, Lestari P, Kim KH, Ha BK, Jun TH, Hwang WJ, Lee T, Lee J and Shim S. (2014). Genome sequence of mungbean and insights into evolution within *Vigna* species. *Nature communications* 5: 5443.
24	A0A1S3TMZ6	31.540	Eukaryotic translation initiation factor 3 subunit F	Kang YJ, Kim SK, Kim MY, Lestari P, Kim KH, Ha BK, Jun TH, Hwang WJ, Lee T, Lee J and Shim S. (2014). Genome sequence of mungbean and insights into evolution within *Vigna* species. *Nature communications* 5: 5443.
25		32	8S vicilin	Gangwar LK, Bajpai GC and Kerkhi SA. (2009). Seed

				protein studies on *Cajanus acutifolius*derived interspecifichybrids in pigeon pea. *Journal of Food Legumes* 22(1): 23-25. Mendoza EMT, Adachi M, Emiliana A, Bernardo N and Utsumi S. (2001). Mungbean [*Vigna radiata* (L.) Wilczek] globulins: purification and characterization. *Journal of Agricultural and Food Chemistry* 49(3): 1552-1558.
26	Q01912	41.477	1-aminocyclopropane-1-carboxylate synthase	Botella JR, Arteca JM, Schlagnhaufer CD, Arteca RN and Phillips AT. (1992). Identification and characterization of a full-length cDNA encoding for an auxin-induced1-aminocyclopropane-1-carboxylate synthase from etiolated mung bean hypocotyl segments and expression of its mRNA in response to indole-3-acetic acid. *Plant molecular biology 20*(3): 425-436.
27	P32291	43.996	Omega-3 fatty acid desaturase, endoplasmic reticulum	Yamamoto KT, Mori H and Imaseki H.(1992). Novel mRNA sequences induced by indole-3-acetic acid in sections of elongating hypocotyls of mung bean (*Vigna radiata*). *Plant and cell physiology* 33(1): 13-20.
28	O98997	47.902	Ribulose bisphosphate carboxylase/oxygenase activase, chloroplastic	Yang and Chen (2000) Cloning and sequencing of a Vigna radiata cDNA (www.https://www.uniprot.org/uniprot/O98997/publications)
29	B1NPN8	51.942	8S globulin alpha subunit	Ding LW, Sun QY, Wang ZY, Sun YB and Xu ZF. (2008). Using silica particles to isolate total RNA from plant tissues recalcitrant to extraction in guanidine thiocyanate. *Analytical Biochemistry*374(2):426-428.
30	A8WEL5	56.503	MIPS	Wongkaew A, Nakasathien S and Srinives P. (2010). Isolation and characterization of D-myo-inositol-3-phosphate synthase from mungbean (*Vigna radiata*). *Plant molecular biology reporter* 28(1): 122-127.
31	P32290	56.844	Catalase	Mori H and ImasekiH. (1993). cDNA for catalase from etiolated mung bean (*Vigna radiata*) hypocotyls.*Plant Physiology* 102(2):691-692.
32	P37115	57.888	Trans-cinnamate 4-monooxygenase	Mizutani M, Ward E, DiMaio J, Ohta D, Ryals J and Sato R. (1993). Molecular cloning and sequencing of a cDNA encoding mung bean cytochrome P450 (P450C4H) possessing cinnamate 4-hydroxylase activity. *Biochemical and biophysical research communications* 190(3): 875-880.
33		67	(7S vicilin)	Krishna TG and Bhatia CR.(1985). Vicilin from *Cajanus cajan*seeds. *Phytochemistry* 24(10): 2201-2203.
34	P13548	68.681	V-type proton ATPase catalytic subunit A	Matsuura-Endo C, Maeshima M and Yoshida S. (1990). Subunit composition of vacuolar membrane H+- ATPase from mung bean. *European Journal of Biochemistry* 187(3): 745-751.
35	A0A1S3VTQ0	69.529	Glycinin G4	Kang YJ, Kim SK, Kim MY, Lestari P, Kim KH, Ha BK, Jun TH, Hwang WJ, Lee T, Lee J and Shim S. (2014). Genome sequence of mungbean and insights into evolution within *Vigna* species. *Nature communications* 5: 5443.
36	P29001	72.167	Acid beta-fructofuranosidase	Arai M, Mori H and Imaseki H. (1992). Cloning and sequence of cDNAs for an intracellular acid invertase from etiolated hypocotyls of mung bean and expression of the gene during growth of seedlings. *Plant and cell physiology* 33(3): 245-252.
37		74	16.5S globulins	Freitas RL, Teixeira AR and Ferreira RB. (2004). Characterization of the proteins from *Vigna unguiculate*seeds. *Journal of Agriculturaland Food Chemistry* 52(6):1682-1687.
38	P37116	76.506	NADPH--cytochrome P450 reductase	Shet MS, Sathasivan K, Arlotto MA, Mehdy MC and Estabrook RW.(1993). Purification, characterization, and

				cDNA cloning of an NADPH-cytochrome P450 reductase from mung bean. *Proceedings of the National Academy of Sciences*90(7): 2890-2894.
39		79	79 kDa (α-vignin of 16.5S globulins)	Freitas RL, Teixeira AR and Ferreira RB. (2004). Characterization of the proteins from *Vigna unguiculate*seeds. *Journal of Agricultural and Food Chemistry* 52(6):1682-1687.
40	P21616	80.037	Pyrophosphate-energized vacuolar membrane proton pump	Maeshima M and Yoshida S. (1989). Purification and properties of vacuolar membrane proton-translocating inorganic pyrophosphatase from mung bean. *Journal of Biological Chemistry* 264(33): 20068-20073.
41	Q4KXC5	84.333	Starch branching enzyme I	Chang JW, LiSC, ShihYC, Wang R, Chung PS and Ko YT.(2010). Molecular characterization of mungbean (*Vigna radiata* L.) starch branching enzyme I. *Journal of agricultural and food chemistry* 58(19): 10437-10444.
42	Q01390	92.092	Sucrose synthase	Arai M, Mori H and Imaseki H. (1992). Expression of the gene for sucrose synthase during growth of mung bean seedlings. *Plant and cell physiology* 33(4): 503-506.