

Appendix A *StPP2C* gene family in potato

Gene name	Gene ID	Chr no.	Gene position	Protein length (aa)	Isoelectric point (pI)	Molecular weight (Mw) (kDa)	Protein hydrophobicity	Subcellular localization
<i>SIPP2C1</i>	PGSC0003DMG400006242	1	11 431 258–11 433 178	358	5.88	40.08	-0.32	Cytoplasmic
<i>SIPP2C2</i>	PGSC0003DMG400011321	1	58 018 090–58 020 283	521	5.06	56.91	-0.23	Outer membrane
<i>SIPP2C3</i>	PGSC0003DMG400032110	1	60 945 910–60 952 135	414	4.80	45.16	-0.42	Outer membrane
<i>SIPP2C4</i>	PGSC0003DMG400008998	1	62 237 094–62 251 920	618	5.90	68.61	-0.27	Outer membrane
<i>SIPP2C5</i>	PGSC0003DMG400005213	1	63 179 076–63 183 582	352	4.85	38.84	-0.15	Cytoplasmic
<i>SIPP2C6</i>	PGSC0003DMG400024772	1	77 736 681–77 738 929	367	6.19	40.95	-0.28	Cytoplasmic
<i>SIPP2C7</i>	PGSC0003DMG400024776	1	77 826 881–77 830 250	427	7.93	46.19	-0.15	Outer membrane
<i>SIPP2C8</i>	PGSC0003DMG400012581	1	81 967 006–81 971 256	283	7.18	30.99	-0.42	Cytoplasmic
<i>SIPP2C9</i>	PGSC0003DMG400025756	1	83 785 549–83 788 318	375	7.20	42.20	-0.26	Cytoplasmic
<i>SIPP2C10</i>	PGSC0003DMG400018043	1	87 746 185–87 750 992	388	8.52	42.89	-0.32	Outer membrane
<i>SIPP2C11</i>	PGSC0003DMG400023163	2	18 945 638–18 950 416	371	5.39	40.47	-0.35	Cytoplasmic
<i>SIPP2C12</i>	PGSC0003DMG400001510	2	38 333 521–38 336 520	384	5.60	41.72	-0.30	Cytoplasmic
<i>SIPP2C13</i>	PGSC0003DMG400003589	2	39 027 292–39 029 827	390	7.73	43.17	-0.23	Outer membrane
<i>SIPP2C14</i>	PGSC0003DMG400024944	2	43 133 458–43 136 520	372	5.38	40.96	-0.26	Cytoplasmic
<i>SIPP2C15</i>	PGSC0003DMG400022551	3	3 334 206–3 339 249	397	7.67	44.01	-0.23	Cytoplasmic
<i>SIPP2C16</i>	PGSC0003DMG400016742	3	33 835 833–33 837 348	410	6.06	45.09	-0.40	Cytoplasmic
<i>SIPP2C17</i>	PGSC0003DMG400007561	3	41 220 770–41 221 093	107	5.30	11.54	-0.17	Extracellular
<i>SIPP2C18</i>	PGSC0003DMG400039720	3	41 259 803–41 262 133	332	5.71	36.62	-0.20	Cytoplasmic
<i>SIPP2C19</i>	PGSC0003DMG400040671	3	41 273 967–41 278 371	342	9.18	38.36	-0.36	Cytoplasmic
<i>SIPP2C20</i>	PGSC0003DMG400009111	3	45 073 282–45 079 784	299	4.90	32.45	-0.43	Cytoplasmic
<i>SIPP2C21</i>	PGSC0003DMG400009112	3	45 121 837–45 124 985	399	5.40	44.23	-0.48	Cytoplasmic
<i>SIPP2C22</i>	PGSC0003DMG400018545	3	45 699 610–45 702 964	431	6.13	47.79	-0.17	Cytoplasmic
<i>SIPP2C23</i>	PGSC0003DMG400005741	3	58 507 315–58 513 612	338	6.22	36.89	-0.19	Cytoplasmic
<i>SIPP2C24</i>	PGSC0003DMG400002573	3	61 212 645–61 216 413	540	4.98	58.36	-0.08	Cytoplasmic
<i>SIPP2C25</i>	PGSC0003DMG400013908	4	27 074 484–27 075 992	191	5.73	21.43	-0.54	Cytoplasmic
<i>SIPP2C26</i>	PGSC0003DMG400010520	4	49 665 824–49 672 485	408	4.81	44.58	-0.30	Cytoplasmic
<i>SIPP2C27</i>	PGSC0003DMG400008021	4	68 439 547–68 444 218	457	5.41	49.50	-0.22	Outer membrane
<i>SIPP2C28</i>	PGSC0003DMG400009990	4	71 801 437–71 805 408	385	4.93	42.31	-0.28	Cytoplasmic
<i>SIPP2C29</i>	PGSC0003DMG401014059	5	3 244 758–3 247 384	429	7.09	46.28	-0.17	Cytoplasmic
<i>SIPP2C30</i>	PGSC0003DMG400027174	5	47 813 548–47 815 526	396	5.06	42.78	-0.20	Outer membrane
<i>SIPP2C31</i>	PGSC0003DMG400027196	5	48 266 790–48 268 303	418	5.52	45.26	-0.32	Cytoplasmic
<i>SIPP2C32</i>	PGSC0003DMG400027155	5	48 572 078–48 574 199	400	4.77	43.69	-0.17	Cytoplasmic
<i>SIPP2C33</i>	PGSC0003DMG400023473	5	51 400 875–51 404 017	470	5.21	51.73	-0.43	Outer membrane
<i>SIPP2C34</i>	PGSC0003DMG400023347	5	51 500 515–51 504 770	384	7.20	42.73	-0.26	Cytoplasmic
<i>SIPP2C35</i>	PGSC0003DMG400007297	6	311 132–315 014	352	4.94	38.81	-0.11	Cytoplasmic
<i>SIPP2C36</i>	PGSC0003DMG400020541	6	3 167 929–3 169 403	388	6.08	42.07	-0.25	Outer membrane
<i>SIPP2C37</i>	PGSC0003DMG400019604	6	38 215 045–38 216 611	398	8.74	44.43	-0.44	Cytoplasmic
<i>SIPP2C38</i>	PGSC0003DMG400016274	6	40 127 311–40 133 129	206	7.55	22.86	-0.09	Cytoplasmic

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Table 1 (Continued from preceding page)

Gene name	Gene ID	Chr no.	Gene position	Protein length (aa)	Isoelectric point (pI)	Molecular weight (Mw) (kDa)	Protein hydrophobicity	Subcellular localization
SIPP2C39	PGSC0003DMG400026140	6	45 803 265–45 807 407	374	8.57	41.50	-0.23	Cytoplasmic
SIPP2C40	PGSC0003DMG400026085	6	46 215 003–46 219 525	375	5.65	40.91	-0.38	Cytoplasmic
SIPP2C41	PGSC0003DMG400030410	6	56 600 668–56 603 610	712	5.46	79.70	-0.54	Outer membrane
SIPP2C42	PGSC0003DMG400030332	6	56 814 694–56 816 543	410	5.22	44.70	-0.34	Cytoplasmic
SIPP2C43	PGSC0003DMG400030364	6	57 298 448–57 300 210	379	7.91	40.51	-0.24	Outer membrane
SIPP2C44	PGSC0003DMG400030387	6	57 718 112–57 719 053	313	5.27	34.73	-0.06	Cytoplasmic
SIPP2C45	PGSC0003DMG400030694	7	3 152 464–3 155 585	383	5.04	42.17	-0.30	Cytoplasmic
SIPP2C46	PGSC0003DMG400018004	7	37 157 742–37 159 943	544	5.38	60.08	-0.28	Cytoplasmic
SIPP2C47	PGSC0003DMG400018314	7	48 775 597–48 779 294	472	5.63	52.38	-0.44	Cytoplasmic
SIPP2C48	PGSC0003DMG400032820	7	49 453 901–49 456 892	286	6.49	31.19	-0.31	Cytoplasmic
SIPP2C49	PGSC0003DMG400012408	7	53 075 728–53 078 645	282	5.67	30.94	-0.33	Cytoplasmic
SIPP2C50	PGSC0003DMG402013921	7	54 574 114–54 575 235	373	6.63	39.97	-0.15	Extracellular
SIPP2C51	PGSC0003DMG400022196	7	55 237 248–55 240 320	292	5.57	32.07	0.14	Cytoplasmic
SIPP2C52	PGSC0003DMG400022137	7	56 319 622–56 323 316	515	5.75	56.38	-0.39	Cytoplasmic
SIPP2C53	PGSC0003DMG400020517	8	1 239 864–1 245 563	781	5.23	86.17	-0.46	Cytoplasmic
SIPP2C54	PGSC0003DMG400008212	8	34 753 142–34 753 414	90	8.53	10.15	-0.32	Nuclear
SIPP2C55	PGSC0003DMG400002208	8	36 803 307–36 804 175	195	4.87	21.45	-0.14	Cytoplasmic
SIPP2C56	PGSC0003DMG400010831	8	43 247 121–43 247 740	88	5.74	9.67	-0.25	Chloroplast
SIPP2C57	PGSC0003DMG401017504	8	49 880 593–49 886 539	798	5.20	87.73	-0.49	Outer membrane
SIPP2C58	PGSC0003DMG400044105	8	55 859 875–55 861 616	200	5.12	21.67	-0.10	Cytoplasmic
SIPP2C59	PGSC0003DMG400008840	9	1 844 496–1 847 027	631	5.58	70.10	-0.37	Outer membrane
SIPP2C60	PGSC0003DMG400002022	9	7 011 706–7 014 886	378	9.23	41.86	-0.26	Cytoplasmic
SIPP2C61	PGSC0003DMG400017166	9	56 592 735–56 595 698	286	9.54	32.53	-0.70	Cytoplasmic
SIPP2C62	PGSC0003DMG400011273	10	699 582–703 795	552	5.50	60.50	-0.48	Cytoplasmic
SIPP2C63	PGSC0003DMG400021678	10	4 034 124–4 037 134	470	5.11	51.83	-0.45	Cytoplasmic
SIPP2C64	PGSC0003DMG400005456	10	14 783 749–14 786 677	371	8.89	41.31	-0.34	Cytoplasmic
SIPP2C65	PGSC0003DMG400026717	10	47 455 519–47 458 976	383	8.68	42.59	-0.30	Cytoplasmic
SIPP2C66	PGSC0003DMG400011863	10	49 477 310–49 480 578	445	6.39	50.19	-0.63	Cytoplasmic
SIPP2C67	PGSC0003DMG400019154	10	51 232 357–51 234 476	600	5.61	66.92	-0.42	Outer membrane
SIPP2C68	PGSC0003DMG400011104	10	53 702 127–53 705 532	452	5.67	51.60	-0.68	Cytoplasmic
SIPP2C69	PGSC0003DMG400011050	10	54 707 544–54 709 500	376	9.40	41.75	-0.31	Outer membrane
SIPP2C70	PGSC0003DMG401011442	10	58 895 334–58 898 174	462	4.57	47.21	-0.44	Cytoplasmic
SIPP2C71	PGSC0003DMG400011443	10	58 906 298–58 906 937	184	4.47	20.88	-0.43	Nuclear
SIPP2C72	PGSC0003DMG402011442	10	58 909 999–58 912 502	386	5.93	43.25	-0.17	Cytoplasmic
SIPP2C73	PGSC0003DMG400011441	10	58 916 393–58 918 781	409	5.37	45.49	-0.21	Cytoplasmic
SIPP2C74	PGSC0003DMG400011440	10	58 920 720–58 922 388	390	6.07	43.99	-0.26	Cytoplasmic
SIPP2C75	PGSC0003DMG400007819	12	1 933 290–1 937 445	383	5.21	42.36	-0.27	Cytoplasmic
SIPP2C76	PGSC0003DMG400029297	12	57 822 397–57 824 721	536	4.68	58.60	-0.23	Cytoplasmic
SIPP2C77	PGSC0003DMG400029275	12	58 165 054–58 170 231	293	5.04	31.49	-0.33	Outer membrane
SIPP2C78	PGSC0003DMG401004637	12	60 243 323–60 245 525	496	5.35	53.78	-0.21	Outer membrane