

Table 3 Origin and characters of each accession under study

No	Accession name	Character	No	Accession	Character	No	Accession	Character	No	Accession	Character
1	Acc. 200485	Spiny	41	Acc. 205086	Spiny	81	Acc. 208826	Spiny	121	Acc. 231427	Spiny
2	Acc. 200486	Spiny	42	Acc. 205087	Spiny	82	Acc. 208827	Spiny	122	Acc. 231428	Spiny
3	Acc. 200487	Spiny	43	Acc. 205088	Spineless	83	Acc. 208894	Spiny	123	Acc. 231429	Spiny
4	Acc. 200488	Spiny	44	Acc. 205089	Spiny	84	Acc. 208895	Spiny	124	Acc. 231430	Spiny
5	Acc. 200489	Spiny	45	Acc. 205090	Spiny	85	Acc. 212471	Spiny	125	Acc. 231431	Spiny
6	Acc.202944	Spiny	46	Acc. 205091	Spiny	86	Acc. 212472	Spiny	126	Acc. 231432	Spiny
7	Acc. 203242	Spiny	47	Acc. 205092	Spiny	87	Acc. 212473	Spiny	127	Acc. 231433	Spiny
8	Acc. 203243	Spiny	48	Acc. 205093	Spiny	88	Acc. 212588	Spiny	128	Acc. 231434	Spiny
9	Acc. 203244	Spiny	49	Acc. 205094	Spiny	89	Acc. 212683	Spiny	129	Acc. 231435	Spiny
10	Acc. 205049	Spiny	50	Acc. 205095	Spiny	90	Acc. 212684	Spiny	130	Acc. 231436	Spiny
11	Acc. 205050	Spiny	51	Acc. 205096	Spiny	91	Acc. 215576	Spiny	131	Acc. 231437	Spiny
12	Acc. 205053	Spiny	52	Acc. 205147	Spiny	92	Acc.216851	Spineless	132	Acc. 231438	Spiny
13	Acc. 205054	Spiny	53	Acc. 207453	Spiny	93	Acc.216852	Spiny	133	Acc. 231439	Spiny
14	Acc.205056	Spiny	54	Acc. 207454	Spiny	94	Acc. 219794	Spiny	134	Acc. 231440	Spineless
15	Acc.205057	Spiny	55	Acc. 207455	Spiny	95	Acc. 223285	Spiny	135	Acc. 231441	Spineless
16	Acc.205058	Spiny	56	Acc. 207456	Spiny	96	Acc. 227842	Spiny	136	Acc. 231442	Spiny
17	Acc.205059	Spiny	57	Acc. 207457	Spiny	97	Acc.227843	Spiny	137	Acc. 231443	Spineless
18	Acc.205060	Spiny	58	Acc. 207458	Spiny	98	Acc.227844	Spiny	138	Acc. 231444	Spiny
19	Acc.205061	Spiny	59	Acc. 207459	Spiny	99	Acc.227845	Spiny	139	Acc. 231445	Spiny
20	Acc.205062	Spiny	60	Acc. 207460	Spiny	100	Acc.227846	Spiny	140	Acc. 231446	Spiny
21	Acc. 205064	Spiny	61	Acc. 207461	Spiny	101	Acc.227847	Spiny	141	Acc. 231447	Spiny
22	Acc. 205065	Spiny	62	Acc. 207462	Spiny	102	Acc.227848	Spiny	142	Acc. 231448	Spiny
23	Acc. 205066	Spiny	63	Acc. 207463	Spiny	103	Acc.227849	Spiny	143	Acc. 231449	Spiny
24	Acc. 205067	Spiny	64	Acc. 207464	Spiny	104	Acc.228657	Spiny	144	Acc. 231450	Spiny
25	Acc. 205068	Spiny	65	Acc. 207465	Spiny	105	Acc. 229085	Spiny	145	Acc. 231451	Spiny
26	Acc. 205069	Spiny	66	Acc. 207466	Spiny	106	Acc. 229086	Spiny	146	Acc. 231452	Spiny
27	Acc. 205070	Spiny	67	Acc. 207467	Spiny	107	Acc. 229087	Spiny	147	Acc. 231453	Spiny
28	Acc. 205071	Spiny	68	Acc. 207468	Spiny	108	Acc. 229952	Spiny	148	Acc. 232187	Spiny
29	Acc. 205072	Spiny	69	Acc. 207469	Spiny	109	Acc. 229953	Spiny	149	Acc. 232188	Spiny
30	Acc. 205073	Spiny	70	Acc. 207470	Spiny	110	Acc. 229954	Spiny	150	Acc. 235484	Spiny
31	Acc. 205075	Spiny	71	Acc. 207471	Spiny	111	Acc. 231323	Spiny	151	Acc. 235485	Spiny
32	Acc. 205076	Spiny	72	Acc. 207472	Spiny	112	Acc. 231417	Spiny	152	Acc. 235716	Spiny
33	Acc. 205077	Spiny	73	Acc. 207473	Spiny	113	Acc. 231418	Spiny	153	Acc. 235717	Spiny
34	Acc. 205079	Spiny	74	Acc. 207475	Spiny	114	Acc. 231419	Spiny	154	Acc. 235718	Spiny
35	Acc. 205080	Spiny	75	Acc. 207476	Spiny	115	Acc. 231420	Spiny	155	Acc. 238275	Spiny
36	Acc. 205081	Spiny	76	Acc. 207477	Spiny	116	Acc. 231421	Spiny	156	Acc. 239094	Spiny
37	Acc. 205082	Spiny	77	Acc. 207983	Spiny	117	Acc. 231423	Spiny	157	Acc. 241791	Spiny
38	Acc. 205083	Spiny	78	Acc. 208017	Spiny	118	Acc. 231424	Spiny	158	Acc. 241792	Spiny
39	Acc. 205084	Spiny	79	Acc. 208018	Spiny	119	Acc. 231425	Spiny	159	Acc. 241793	Spiny
40	Acc. 205085	Spiny	80	Acc. 208019	Spiny	120	Acc. 231426	Spiny	160	Acc. 241794	Spiny