

Gene ID RAST	Start	Stop	Length (AA)	Genomic region
solani_g3_0016	15507	15355	50	
solani_g3_0017	15521	15652	43	
solani_g3_0019	17643	17762	39	
solani_g3_0021	18341	18457	38	
solani_g3_0045	41429	41566	45	
solani_g3_0065	65783	65658	41	
solani_g3_0067	66792	66676	38	
solani_g3_0070	70443	70285	52	
solani_g3_0078	81259	80603	218	
solani_g3_0101	103737	103925	62	
solani_g3_0107	108685	111009	774	
solani_g3_0122	130331	130483	50	
solani_g3_0130	138579	137611	322	
solani_g3_0132	140651	140430	73	
solani_g3_0133	141706	140972	244	
solani_g3_0134	142042	141896	48	
solani_g3_0147	155461	155604	47	
solani_g3_0159	164484	164606	40	
solani_g3_0179	184298	184414	38	
solani_g3_0181	185140	185000	46	
solani_g3_0182	185439	186242	267	
solani_g3_0183	186517	186383	44	
solani_g3_0188	191427	191588	53	
solani_g3_0191	192668	192784	38	
solani_g3_0214	216759	216878	39	
solani_g3_0239	242320	241958	120	
solani_g3_0254	255689	255817	42	
solani_g3_0269	270986	271132	48	
solani_g3_0280	283854	283714	46	
solani_g3_0295	299193	299450	85	GR 1 (HTI)
solani_g3_0296	300548	299655	297	GR 1 (HTI)
solani_g3_0297	300608	301252	214	GR 1 (HTI)
solani_g3_0298	301529	301708	59	GR 1 (HTI)
solani_g3_0299	301728	301940	70	GR 1 (HTI)
solani_g3_0300	302106	301984	40	GR 1 (HTI)
solani_g3_0304	305393	305247	48	
solani_g3_0341	352904	353026	40	
solani_g3_0343	353907	353788	39	
solani_g3_0345	354739	354930	63	
solani_g3_0366	377248	377739	163	GR 2 (HTI)
solani_g3_0367	378295	378912	205	GR 2 (HTI)
solani_g3_0368	385090	379172	1972	GR 2 (HTI)
solani_g3_0369	386150	386416	88	GR 2 (HTI)
solani_g3_0370	386775	386900	41	GR 2 (HTI)
solani_g3_0372	389301	388603	232	GR 2 (HTI)
solani_g3_0373	390095	389304	263	GR 2 (HTI)
solani_g3_0374	391149	390088	353	GR 2 (HTI)
solani_g3_0375	392738	391164	524	GR 2 (HTI)

solani_g3_0376	394101	392830	423	GR 2 (HTI)
solani_g3_0377	394868	394167	233	GR 2 (HTI)
solani_g3_0378	398497	394880	1205	GR 2 (HTI)
solani_g3_0379	400292	398490	600	GR 2 (HTI)
solani_g3_0389	416111	416653	180	
solani_g3_0398	428755	428916	53	
solani_g3_0400	430159	430019	46	
solani_g3_0401	430289	430173	38	
solani_g3_0403	431762	431589	57	
solani_g3_0404	431783	431929	48	
solani_g3_0405	433409	432204	401	
solani_g3_0406	433555	433436	39	
solani_g3_0407	433522	433707	61	
solani_g3_0408	434000	433761	79	
solani_g3_0409	446806	434309	4165	
solani_g3_0410	447019	447138	39	
solani_g3_0414	451531	451376	51	
solani_g3_0415	451778	451665	37	
solani_g3_0416	451890	452018	42	
solani_g3_0417	452230	452114	38	
solani_g3_0419	452873	453037	54	
solani_g3_0422	454323	454571	82	
solani_g3_0428	459989	458319	556	
solani_g3_0447	477878	477762	38	
solani_g3_0449	478618	478806	62	
solani_g3_0453	481317	481195	40	
solani_g3_0467	494245	494102	47	
solani_g3_0485	511207	511010	65	
solani_g3_0500	526593	526727	44	
solani_g3_0511	551078	550956	40	
solani_g3_0516	556059	555946	37	
solani_g3_0537	574907	574737	56	
solani_g3_0541	580037	580432	131	
solani_g3_0542	580467	580769	100	
solani_g3_0546	585732	585875	47	
solani_g3_0547	585921	587288	455	
solani_g3_0548	587369	588523	384	
solani_g3_0557	596065	598272	735	
solani_g3_0566	607899	607741	52	
solani_g3_0573	614134	614400	88	
solani_g3_0574	616662	614896	588	
solani_g3_0575	617830	616652	392	
solani_g3_0599	649429	649566	45	
solani_g3_0601	650955	651239	94	
solani_g3_0619	666187	665939	82	
solani_g3_0622	667664	667485	59	
solani_g3_0633	676194	676072	40	
solani_g3_0646	691406	691287	39	
solani_g3_0650	695605	695447	52	
solani_g3_0654	698826	698966	46	

solani_g3_0655	698988	699185	65	
solani_g3_0665	712782	712940	52	
solani_g3_0675	719944	721536	530	
solani_g3_0677	722868	722629	79	
solani_g3_0686	733387	733608	73	
solani_g3_0687	733968	733564	134	
solani_g3_0693	741342	741455	37	
solani_g3_0701	748226	748351	41	
solani_g3_0708	755062	754829	77	
solani_g3_0709	755744	755088	218	
solani_g3_0725	776002	776160	52	
solani_g3_0743	791313	792686	457	
solani_g3_0751	803786	803962	58	
solani_g3_0759	811380	811264	38	
solani_g3_0765	819782	819931	49	
solani_g3_0781	840989	838590	799	
solani_g3_0782	843866	841077	929	
solani_g3_0783	844070	843954	38	
solani_g3_0787	850397	851488	363	
solani_g3_0788	852040	853149	369	
solani_g3_0789	853655	853497	52	
solani_g3_0856	929109	929303	64	
solani_g3_0858	930514	930389	41	
solani_g3_0877	954222	950770	1150	
solani_g3_0879	955332	955454	40	
solani_g3_0917	989461	989574	37	
solani_g3_0926	998069	998590	173	
solani_g3_0928	1000720	1000589	43	
solani_g3_0929	1001295	1000969	108	
solani_g3_0932	1003187	1003047	46	
solani_g3_0939	1008690	1008824	44	
solani_g3_0940	1010476	1010598	40	
solani_g3_0942	1012225	1012100	41	
solani_g3_0946	1021071	1015345	1908	GR 3
solani_g3_0947	1024559	1021068	1163	GR 3
solani_g3_0948	1031400	1024663	2245	GR 3
solani_g3_0949	1033404	1031569	611	GR 3
solani_g3_0950	1033796	1033527	89	GR 3
solani_g3_0951	1035065	1033821	414	GR 3
solani_g3_0952	1036106	1035117	329	GR 3
solani_g3_0953	1052179	1036103	5358	GR 3
solani_g3_0954	1052536	1052423	37	GR 3
solani_g3_0976	1084562	1084690	42	
solani_g3_0981	1092250	1092387	45	
solani_g3_0982	1092617	1092501	38	
solani_g3_0985	1095392	1094406	328	
solani_g3_0991	1103987	1103805	60	
solani_g3_1000	1112915	1113376	153	
solani_g3_1027	1144011	1143871	46	
solani_g3_1038	1153960	1153841	39	

solani_g3_1041	1155290	1155451	53	
solani_g3_1054	1167040	1166927	37	
solani_g3_1088	1200042	1199920	40	
solani_g3_1089	1200257	1200138	39	
solani_g3_1098	1212078	1213916	612	
solani_g3_1099	1214124	1215365	413	
solani_g3_1126	1249269	1249415	48	
solani_g3_1127	1249766	1249608	52	
solani_g3_1130	1250747	1250896	49	
solani_g3_1135	1256757	1256641	38	GR 4
solani_g3_1136	1257193	1256780	137	GR 4
solani_g3_1137	1260555	1257313	1080	GR 4GR 4GR 4GR
solani_g3_1138	1261961	1260555	468	GR 4GR 4GR 4GR
solani_g3_1139	1262980	1262237	247	GR 4GR 4GR 4GR
solani_g3_1140	1265183	1262994	729	GR 4GR 4GR 4GR
solani_g3_1141	1265838	1265677	53	GR 4GR 4GR 4GR
solani_g3_1142	1266431	1266078	117	GR 4GR 4GR 4GR
solani_g3_1143	1266884	1266459	141	GR 4GR 4GR 4GR
solani_g3_1144	1267125	1267238	37	GR 4GR 4GR 4GR
solani_g3_1151	1274128	1273370	252	GR 5
solani_g3_1152	1274856	1274155	233	GR 5
solani_g3_1153	1275551	1274859	230	GR 5
solani_g3_1154	1276435	1275623	270	GR 5
solani_g3_1155	1276590	1277489	299	GR 5
solani_g3_1156	1278894	1277620	424	GR 5
solani_g3_1157	1280198	1278933	421	GR 5
solani_g3_1158	1281576	1280365	403	GR 5
solani_g3_1159	1282193	1281579	204	GR 5
solani_g3_1160	1282382	1283281	299	GR 5
solani_g3_1171	1295416	1295222	64	
solani_g3_1174	1297135	1296959	58	
solani_g3_1177	1299781	1300011	76	
solani_g3_1179	1301294	1302700	468	
solani_g3_1180	1302732	1304267	511	
solani_g3_1181	1304289	1305746	485	
solani_g3_1189	1314774	1314100	224	
solani_g3_1191	1315892	1315764	42	GR 6
solani_g3_1192	1317751	1316096	551	GR 6
solani_g3_1193	1318632	1317733	299	GR 6
solani_g3_1194	1318924	1318805	39	GR 6
solani_g3_1195	1319020	1320357	445	GR 6
solani_g3_1196	1320545	1320417	42	GR 6
solani_g3_1197	1320670	1322283	537	GR 6
solani_g3_1198	1322307	1322999	230	GR 6
solani_g3_1215	1339525	1339638	37	
solani_g3_1223	1346086	1345970	38	
solani_g3_1242	1363611	1363730	39	
solani_g3_1248	1370352	1370630	92	
solani_g3_1266	1395085	1394846	79	
solani_g3_1269	1398113	1396938	391	GR 7

solani_g3_1270	1399460	1398150	436	GR 7
solani_g3_1271	1400977	1399460	505	GR 7GR 7GR 7GR
solani_g3_1272	1402709	1401003	568	GR 7GR 7GR 7GR
solani_g3_1273	1403545	1402697	282	GR 7GR 7GR 7GR
solani_g3_1274	1403994	1403839	51	GR 7GR 7GR 7GR
solani_g3_1275	1404092	1404985	297	GR 7GR 7GR 7GR
solani_g3_1276	1406518	1405187	443	GR 7GR 7GR 7GR
solani_g3_1277	1407183	1406527	218	GR 7GR 7GR 7GR
solani_g3_1278	1407869	1407198	223	GR 7GR 7GR 7
solani_g3_1279	1408163	1408035	42	GR 7GR 7GR 7
solani_g3_1283	1411057	1410845	70	GR 7GR 7GR 7
solani_g3_1284	1411395	1412402	335	GR 7GR 7GR 7
solani_g3_1285	1412000	1413000	332	GR 7GR 7GR 7
solani_g3_1288	1416229	1417230	333	GR 7GR 7GR 7
solani_g3_1289	1418241	1417864	125	GR 7GR 7GR 7
solani_g3_1290	1419233	1418340	297	GR 7GR 7GR 7
solani_g3_1291	1419345	1419226	39	GR 7GR 7GR 7
solani_g3_1292	1419594	1420241	215	GR 7GR 7GR 7
solani_g3_1298	1427335	1427111	74	
solani_g3_1303	1432305	1432177	42	
solani_g3_1331	1458814	1458951	45	
solani_g3_1332	1459107	1458955	50	
solani_g3_1342	1471452	1471339	37	
solani_g3_1349	1480283	1480408	41	
solani_g3_1350	1480589	1480383	68	
solani_g3_1384	1517492	1517259	77	
solani_g3_1405	1539161	1539496	111	
solani_g3_1406	1539480	1539596	38	
solani_g3_1447	1586868	1587053	61	
solani_g3_1448	1587385	1587498	37	
solani_g3_1456	1595697	1595569	42	
solani_g3_1457	1595781	1595933	50	
solani_g3_1464	1603612	1603839	75	
solani_g3_1472	1611419	1611297	40	
solani_g3_1486	1626304	1625780	174	
solani_g3_1487	1626661	1626362	99	
solani_g3_1488	1626881	1627804	307	
solani_g3_1494	1633750	1633601	49	
solani_g3_1505	1645084	1645203	39	
solani_g3_1528	1668132	1667635	165	
solani_g3_1529	1669475	1668129	448	
solani_g3_1533	1672410	1672267	47	
solani_g3_1545	1685898	1685767	43	
solani_g3_1552	1693295	1693170	41	
solani_g3_1553	1693464	1698323	1619	
solani_g3_1554	1698286	1698444	52	
solani_g3_1555	1698717	1698860	47	
solani_g3_1561	1702786	1702899	37	
solani_g3_1581	1721963	1721817	48	
solani_g3_1600	1747922	1747803	39	
solani_g3_1606	1753620	1753742	40	

solani_g3_1626	1779317	1779195	40	
solani_g3_1629	1782265	1782152	37	
solani_g3_1630	1782470	1782330	46	
solani_g3_1634	1785022	1785957	311	GR 8
solani_g3_1635	1786386	1787432	348	GR 8
solani_g3_1636	1789385	1787514	623	GR 8
solani_g3_1637	1789521	1789387	44	GR 8
solani_g3_1638	1790587	1789739	282	GR 8
solani_g3_1639	1792010	1790700	436	GR 8
solani_g3_1640	1792503	1792261	80	GR 8
solani_g3_1680	1834446	1835786	446	
solani_g3_1687	1841742	1841506	78	
solani_g3_1688	1841962	1841708	84	
solani_g3_1693	1845960	1846079	39	
solani_g3_1700	1853634	1853515	39	
solani_g3_1702	1854472	1854332	46	
solani_g3_1705	1856582	1856463	39	
solani_g3_1707	1859168	1859022	48	
solani_g3_1708	1859451	1859323	42	
solani_g3_1710	1861173	1861289	38	
solani_g3_1711	1861286	1861483	65	
solani_g3_1715	1866490	1866305	61	
solani_g3_1716	1866669	1867157	162	
solani_g3_1736	1893560	1893673	37	
solani_g3_1739	1897443	1897297	48	
solani_g3_1745	1902357	1902602	81	
solani_g3_1750	1906536	1906039	165	
solani_g3_1760	1916264	1917004	246	
solani_g3_1768	1927754	1927638	38	
solani_g3_1773	1935358	1935188	56	
solani_g3_1809	1973667	1973542	41	
solani_g3_1816	1982429	1982301	42	
solani_g3_1828	1994174	1994040	44	
solani_g3_1829	1995338	1995466	42	
solani_g3_1835	2000875	2000991	38	
solani_g3_1852	2023092	2022919	57	
solani_g3_1870	2042949	2042803	48	
solani_g3_1875	2049167	2048976	63	
solani_g3_1877	2050005	2049883	40	
solani_g3_1885	2054455	2054336	39	
solani_g3_1894	2065245	2065123	40	
solani_g3_1903	2075141	2075254	37	
solani_g3_1907	2079012	2079353	113	
solani_g3_1910	2081561	2081382	59	
solani_g3_1929	2101126	2100542	194	
solani_g3_1931	2102703	2102569	44	
solani_g3_1941	2114034	2113909	41	
solani_g3_1959	2132302	2132415	37	
solani_g3_1966	2140461	2140604	47	
solani_g3_1985	2158289	2158161	42	

solani_g3_1986	2159126	2158380	248	
solani_g3_1988	2164148	2163432	238	GR 9
solani_g3_1989	2165330	2164200	376	GR 9
solani_g3_1990	2167318	2165399	639	GR 9
solani_g3_1991	2168876	2167428	482	GR 9
solani_g3_1992	2169728	2168901	275	GR 9
solani_g3_1993	2186735	2169810	5641	GR 9
solani_g3_1994	2193906	2186728	2392	GR 9
solani_g3_1995	2194397	2194035	120	GR 9
solani_g3_1996	2195560	2194394	388	GR 9
solani_g3_1997	2195855	2195586	89	GR 9
solani_g3_1998	2216612	2195919	6897	GR 9
solani_g3_1999	2217738	2216605	377	GR 9
solani_g3_2000	2225288	2217735	2517	GR 9
solani_g3_2001	2226668	2225364	434	GR 9
solani_g3_2002	2238284	2226732	3850	GR 9
solani_g3_2003	2238306	2238419	37	GR 9
solani_g3_2004	2239683	2240939	418	GR 9
solani_g3_2005	2240971	2242233	420	GR 9
solani_g3_2006	2242278	2243012	244	GR 9
solani_g3_2007	2243092	2242976	38	GR 9
solani_g3_2008	2243075	2243767	230	GR 9
solani_g3_2009	2244492	2243884	202	GR 9
solani_g3_2010	2245375	2245560	61	GR 9
solani_g3_2020	2257210	2257073	45	
solani_g3_2028	2265025	2264843	60	
solani_g3_2031	2268075	2267953	40	
solani_g3_2039	2279079	2279219	46	
solani_g3_2052	2295753	2295550	67	
solani_g3_2063	2302326	2301973	117	
solani_g3_2094	2321975	2321205	256	GR 10
solani_g3_2095	2322952	2321972	326	GR 10
solani_g3_2096	2323839	2322949	296	GR 10
solani_g3_2097	2324650	2323856	264	GR 10
solani_g3_2098	2325616	2324654	320	GR 10
solani_g3_2099	2325763	2327121	452	GR 10
solani_g3_2105	2333453	2332644	269	
solani_g3_2122	2349736	2349617	39	
solani_g3_2126	2352456	2352337	39	
solani_g3_2132	2358281	2358135	48	
solani_g3_2161	2390832	2390698	44	
solani_g3_2163	2393733	2393323	136	
solani_g3_2173	2405611	2405498	37	
solani_g3_2178	2409299	2409183	38	
solani_g3_2189	2424395	2424258	45	
solani_g3_2191	2424946	2424815	43	
solani_g3_2197	2430473	2430604	43	
solani_g3_2225	2459215	2459328	37	
solani_g3_2237	2471424	2470351	357	
solani_g3_2238	2471614	2471471	47	

solani_g3_2239	2471722	2472534	270	
solani_g3_2241	2474918	2474796	40	
solani_g3_2257	2493133	2493384	83	
solani_g3_2259	2495622	2495500	40	
solani_g3_2264	2504213	2504094	39	
solani_g3_2281	2530589	2528640	649	
solani_g3_2294	2544917	2545075	52	
solani_g3_2316	2566397	2565777	206	GR 11 (HTI)
solani_g3_2317	2567515	2566397	372	GR 11 (HTI)
solani_g3_2319	2569175	2569294	39	GR 11 (HTI)
solani_g3_2320	2569415	2569681	88	GR 11 (HTI)
solani_g3_2321	2569732	2570526	264	GR 11 (HTI)
solani_g3_2322	2571545	2570829	238	GR 11 (HTI)
solani_g3_2338	2586895	2586770	41	
solani_g3_2339	2588227	2587082	381	
solani_g3_2340	2588273	2588401	42	
solani_g3_2342	2590917	2591036	39	
solani_g3_2359	2609610	2608291	439	
solani_g3_2360	2609791	2609675	38	
solani_g3_2361	2610554	2609871	227	
solani_g3_2362	2610695	2610817	40	
solani_g3_2363	2611079	2611903	274	
solani_g3_2385	2637073	2636951	40	
solani_g3_2388	2638466	2638344	40	
solani_g3_2391	2640185	2641432	415	
solani_g3_2393	2642051	2642164	37	
solani_g3_2399	2647974	2648108	44	
solani_g3_2400	2648402	2648286	38	
solani_g3_2401	2648669	2648794	41	
solani_g3_2406	2654733	2654584	49	
solani_g3_2412	2659716	2659438	92	
solani_g3_2416	2665130	2664366	254	
solani_g3_2437	2687809	2687537	90	
solani_g3_2439	2688298	2688435	45	
solani_g3_2440	2688689	2689156	155	
solani_g3_2450	2700016	2699828	62	
solani_g3_2454	2702532	2702711	59	
solani_g3_2455	2703087	2702941	48	
solani_g3_2497	2756662	2756498	54	
solani_g3_2508	2766357	2766542	61	GR 12
solani_g3_2509	2766535	2766675	46	GR 12
solani_g3_2512	2770557	2770868	103	GR 12
solani_g3_2513	2770948	2772015	355	GR 12
solani_g3_2514	2772087	2772818	243	GR 12
solani_g3_2515	2772895	2773593	232	GR 12
solani_g3_2516	2773627	2773893	88	GR 12
solani_g3_2517	2773916	2774170	84	GR 12
solani_g3_2518	2774157	2774744	195	GR 12
solani_g3_2519	2774813	2776174	453	GR 12
solani_g3_2520	2776161	2776583	140	GR 12

solani_g3_2521	2776574	2778283	569	GR 12
solani_g3_2522	2778280	2778708	142	GR 12
solani_g3_2523	2778762	2779343	193	GR 12
solani_g3_2524	2779315	2781639	774	GR 12
solani_g3_2525	2781636	2782208	190	GR 12
solani_g3_2526	2782210	2783367	385	GR 12
solani_g3_2527	2783374	2783847	157	GR 12
solani_g3_2528	2783847	2784578	243	GR 12
solani_g3_2529	2784578	2785804	408	GR 12
solani_g3_2531	2788478	2788597	39	
solani_g3_2545	2802944	2802801	47	
solani_g3_2553	2811154	2811032	40	
solani_g3_2565	2821957	2821817	46	
solani_g3_2576	2835859	2835707	50	
solani_g3_2581	2841273	2841112	53	
solani_g3_2582	2841415	2841528	37	
solani_g3_2595	2854836	2854594	80	
solani_g3_2596	2854858	2855025	55	
solani_g3_2601	2861199	2861321	40	
solani_g3_2618	2878122	2878298	58	
solani_g3_2635	2899818	2899967	49	
solani_g3_2640	2906110	2906256	48	
solani_g3_2645	2911567	2911689	40	
solani_g3_2647	2912988	2913101	37	
solani_g3_2649	2914324	2914437	37	
solani_g3_2657	2920875	2920735	46	
solani_g3_2701	2971504	2969084	806	
solani_g3_2716	2985478	2985603	41	
solani_g3_2727	2995987	2996118	43	
solani_g3_2741	3006486	3006641	51	
solani_g3_2750	3015605	3015435	56	
solani_g3_2765	3032598	3031714	294	
solani_g3_2766	3032742	3033653	303	
solani_g3_2782	3050536	3052023	495	
solani_g3_2798	3074030	3075214	394	
solani_g3_2807	3087965	3087708	85	
solani_g3_2831	3115899	3115663	78	
solani_g3_2839	3122989	3122753	78	
solani_g3_2844	3126800	3127588	262	
solani_g3_2849	3130386	3130246	46	
solani_g3_2860	3140763	3140918	51	
solani_g3_2888	3168495	3168376	39	
solani_g3_2898	3176727	3176323	134	
solani_g3_2905	3182038	3182325	95	
solani_g3_2909	3190026	3192365	779	
solani_g3_2926	3207862	3207749	37	
solani_g3_2947	3232708	3232842	44	
solani_g3_2957	3245730	3245903	57	
solani_g3_2958	3246005	3246280	91	
solani_g3_2959	3247141	3246407	244	

solani_g3_2960	3247992	3247171	273	
solani_g3_2961	3248918	3247989	309	
solani_g3_2962	3250342	3248912	476	
solani_g3_2967	3253835	3253969	44	
solani_g3_2968	3253939	3255366	475	
solani_g3_2982	3271515	3271339	58	GR 13 (HTI)
solani_g3_2983	3271980	3273149	389	GR 13 (HTI)
solani_g3_2984	3273241	3274473	410	GR 13 (HTI)
solani_g3_2985	3274478	3276244	588	GR 13 (HTI)
solani_g3_2986	3276234	3277184	316	GR 13 (HTI)
solani_g3_2987	3277852	3277589	87	GR 13 (HTI)
solani_g3_2988	3278036	3278257	73	GR 13 (HTI)
solani_g3_2989	3278229	3278489	86	GR 13 (HTI)
solani_g3_2990	3279109	3278699	136	GR 13 (HTI)
solani_g3_2991	3279777	3279133	214	GR 13 (HTI)
solani_g3_2992	3279991	3279770	73	GR 13 (HTI)
solani_g3_2993	3280872	3279994	292	GR 13 (HTI)
solani_g3_2994	3281881	3282240	119	GR 13 (HTI)
solani_g3_2995	3282224	3282547	107	GR 13 (HTI)
solani_g3_2996	3282782	3282916	44	GR 13 (HTI)
solani_g3_2997	3283667	3284410	247	GR 13 (HTI)
solani_g3_2998	3285018	3284875	47	GR 13 (HTI)
solani_g3_2999	3285242	3286294	350	GR 13 (HTI)
solani_g3_3000	3286345	3286503	52	GR 13 (HTI)
solani_g3_3001	3286830	3289193	787	GR 13 (HTI)
solani_g3_3002	3289193	3290620	475	GR 13 (HTI)
solani_g3_3003	3290617	3293865	1082	GR 13 (HTI)
solani_g3_3004	3293922	3294962	346	GR 13 (HTI)
solani_g3_3005	3295144	3295503	119	GR 13 (HTI)
solani_g3_3042	3328475	3328636	53	
solani_g3_3048	3332504	3332629	41	
solani_g3_3053	3337945	3337826	39	
solani_g3_3054	3338003	3338143	46	
solani_g3_3056	3338798	3338607	63	
solani_g3_3060	3342464	3342634	56	
solani_g3_3063	3344763	3344599	54	
solani_g3_3069	3351088	3351390	100	
solani_g3_3081	3363064	3362792	90	
solani_g3_3082	3363273	3363064	69	
solani_g3_3089	3367787	3368008	73	
solani_g3_3093	3371940	3371725	71	
solani_g3_3095	3373046	3372894	50	
solani_g3_3109	3384963	3384010	317	
solani_g3_3110	3385142	3386134	330	
solani_g3_3111	3386152	3387156	334	
solani_g3_3112	3387223	3388374	383	
solani_g3_3117	3394119	3394238	39	
solani_g3_3131	3408584	3408748	54	GR 14 (HTI)
solani_g3_3132	3409948	3408893	351	GR 14 (HTI)
solani_g3_3133	3410124	3410930	268	GR 14 (HTI)

solani_g3_3134	3411343	3411468	41	GR 14 (HTI)
solani_g3_3135	3411511	3411807	98	GR 14 (HTI)
solani_g3_3136	3412306	3412542	78	GR 14 (HTI)
solani_g3_3137	3414412	3413534	292	GR 14 (HTI)
solani_g3_3140	3416095	3416331	78	GR 14 (HTI)
solani_g3_3141	3416539	3417810	423	GR 14 (HTI)
solani_g3_3142	3417814	3418380	188	GR 14 (HTI)
solani_g3_3143	3418368	3420308	646	GR 14 (HTI)
solani_g3_3148	3423520	3423690	56	
solani_g3_3164	3440897	3440721	58	
solani_g3_3176	3449742	3449909	55	
solani_g3_3184	3458325	3458519	64	
solani_g3_3191	3466051	3467613	520	
solani_g3_3193	3469011	3470447	478	
solani_g3_3194	3470998	3473775	925	
solani_g3_3201	3480292	3479909	127	
solani_g3_3202	3480860	3480456	134	
solani_g3_3203	3481970	3481341	209	
solani_g3_3234	3516011	3515853	52	
solani_g3_3242	3522683	3522570	37	
solani_g3_3247	3528188	3527586	200	
solani_g3_3248	3529623	3528391	410	
solani_g3_3249	3531250	3529616	544	
solani_g3_3250	3534339	3531244	1031	
solani_g3_3256	3540414	3539833	193	
solani_g3_3257	3540616	3540461	51	
solani_g3_3258	3541579	3541740	53	
solani_g3_3289	3575168	3575401	77	
solani_g3_3290	3575540	3576259	239	
solani_g3_3303	3587846	3587733	37	
solani_g3_3304	3588159	3588016	47	
solani_g3_3313	3596724	3596855	43	
solani_g3_3315	3599969	3599817	50	
solani_g3_3324	3609274	3609143	43	
solani_g3_3336	3624936	3625814	292	GR 15
solani_g3_3337	3625863	3626525	220	GR 15
solani_g3_3338	3626534	3627196	220	GR 15
solani_g3_3339	3627193	3627984	263	GR 15
solani_g3_3340	3628148	3628531	127	GR 15
solani_g3_3341	3628628	3629392	254	GR 15
solani_g3_3342	3629414	3630640	408	GR 15
solani_g3_3347	3635734	3635910	58	
solani_g3_3363	3653108	3652437	223	
solani_g3_3364	3653649	3653398	83	
solani_g3_3380	3673370	3673492	40	GR 16 (HTI)
solani_g3_3381	3673829	3673578	83	GR 16 (HTI)
solani_g3_3382	3673966	3675210	414	GR 16 (HTI)
solani_g3_3383	3675904	3675389	171	GR 16 (HTI)
solani_g3_3385	3676298	3676462	54	GR 16 (HTI)
solani_g3_3386	3678032	3677400	210	GR 16 (HTI)

solani_g3_3387	3678609	3679094	161	GR 16 (HTI)
solani_g3_3388	3679870	3680136	88	GR 16 (HTI)
solani_g3_3389	3681792	3680257	511	GR 16 (HTI)
solani_g3_3390	3682410	3682913	167	GR 16 (HTI)
solani_g3_3391	3682951	3684489	512	GR 16 (HTI)
solani_g3_3392	3684500	3685522	340	GR 16 (HTI)
solani_g3_3393	3686915	3686160	251	GR 16 (HTI)
solani_g3_3395	3688115	3687927	62	GR 16 (HTI)
solani_g3_3398	3689458	3689339	39	
solani_g3_3399	3689522	3689665	47	
solani_g3_3405	3697744	3697869	41	
solani_g3_3407	3699144	3699275	43	
solani_g3_3414	3703924	3704055	43	
solani_g3_3423	3712222	3712347	41	
solani_g3_3428	3720438	3720599	53	
solani_g3_3430	3721225	3721350	41	
solani_g3_3432	3723211	3723035	58	
solani_g3_3433	3723696	3724373	225	
solani_g3_3467	3760101	3759751	116	
solani_g3_3473	3765917	3765804	37	
solani_g3_3486	3778754	3778876	40	
solani_g3_3488	3780835	3780969	44	
solani_g3_3493	3784157	3784270	37	
solani_g3_3495	3785281	3785394	37	
solani_g3_3512	3814085	3815299	404	
solani_g3_3514	3816876	3816112	254	
solani_g3_3515	3817099	3818004	301	
solani_g3_3521	3823964	3824140	58	
solani_g3_3523	3825036	3824911	41	
solani_g3_3524	3826233	3825160	357	GR 17 (HTI)
solani_g3_3525	3826940	3826800	46	GR 17 (HTI)
solani_g3_3526	3826917	3827063	48	GR 17 (HTI)
solani_g3_3527	3827130	3827321	63	GR 17 (HTI)
solani_g3_3534	3836902	3837267	121	GR 17 (HTI)
solani_g3_3535	3839124	3838222	184	GR 17 (HTI)
solani_g3_3536	3839228	3840112	300	GR 17 (HTI)
solani_g3_3537	3840312	3841325	294	GR 17 (HTI)
solani_g3_3538	3841793	3841930	337	GR 17 (HTI)
solani_g3_3539	3842241	3842125	45	GR 17 (HTI)
solani_g3_3540	3842426	3842686	38	GR 17 (HTI)
solani_g3_3541	3843296	3843409	86	GR 17 (HTI)
solani_g3_3543	3843558	3843439	37	
solani_g3_3544	3847430	3847543	39	
solani_g3_3547	3852443	3852730	37	
solani_g3_3554	3865218	3865063	95	
solani_g3_3565	3893139	3892975	51	
solani_g3_3594	3897823	3897945	54	
solani_g3_3601	3919855	3920004	40	
solani_g3_3621	3923309	3920268	49	GR 18
solani_g3_3622	3924409	3923309	1013	GR 18

solani_g3_3623	3925526	3924411	366	GR 18
solani_g3_3624	3926268	3925540	371	GR 18
solani_g3_3625	3926664	3927011	242	GR 18
solani_g3_3626	3929616	3928828	115	GR 18
solani_g3_3629	3929843	3929631	262	GR 18
solani_g3_3630	3931551	3930214	70	GR 18
solani_g3_3631	3932222	3931554	445	GR 18
solani_g3_3632	3933407	3932226	222	GR 18
solani_g3_3633	3936421	3933404	393	GR 18
solani_g3_3634	3937299	3936466	1005	GR 18
solani_g3_3635	3937880	3937296	277	GR 18
solani_g3_3636	3939244	3938159	194	GR 18
solani_g3_3637	3939468	3939346	361	GR 18
solani_g3_3638	3947326	3947580	40	GR 18
solani_g3_3645	4013385	4012753	84	
solani_g3_3702	4020704	4020841	210	
solani_g3_3710	4056835	4056975	45	
solani_g3_3743	4068796	4068975	46	
solani_g3_3753	4070554	4070402	59	
solani_g3_3756	4096329	4095169	50	
solani_g3_3774	4096373	4096537	386	
solani_g3_3775	4172243	4170579	54	
solani_g3_3848	4173671	4173802	43	
solani_g3_3867	4195177	4195338	53	
solani_g3_3886	4214747	4214631	38	
solani_g3_3908	4237503	4237637	44	
solani_g3_3919	4249771	4247900	623	
solani_g3_3928	4259303	4259151	50	
solani_g3_3937	4267169	4269340	723	
solani_g3_3938	4269584	4270750	388	
solani_g3_3939	4271006	4272208	400	
solani_g3_3940	4272323	4273357	344	
solani_g3_3941	4273323	4273457	44	
solani_g3_3942	4273426	4274343	305	
solani_g3_3943	4274369	4275775	468	
solani_g3_3947	4278294	4279151	285	
solani_g3_3948	4279337	4279158	59	
solani_g3_3949	4279317	4280246	309	
solani_g3_3950	4280243	4281514	423	
solani_g3_3951	4281644	4282480	278	
solani_g3_3952	4282722	4284149	475	
solani_g3_3953	4284164	4285537	457	
solani_g3_3962	4297464	4296238	408	
solani_g3_3963	4297672	4297520	50	
solani_g3_3964	4297703	4299205	500	
solani_g3_3965	4299418	4299257	53	
solani_g3_3973	4305690	4305469	73	
solani_g3_3978	4309772	4309969	65	
solani_g3_3985	4317424	4317293	43	
solani_g3_3995	4327875	4328687	270	

solani_g3_3996	4328912	4329244	110	
solani_g3_3997	4329244	4330011	255	
solani_g3_4001	4337058	4337447	129	
solani_g3_4002	4337661	4337527	44	
solani_g3_4003	4337872	4338012	46	
solani_g3_4004	4338031	4338759	242	
solani_g3_4005	4338762	4339148	128	
solani_g3_4006	4340024	4339668	118	
solani_g3_4008	4342755	4342558	65	
solani_g3_4029	4369535	4369696	53	
solani_g3_4035	4376105	4375392	237	GR 19
solani_g3_4036	4377031	4376102	309	GR 19
solani_g3_4037	4377747	4377028	239	GR 19
solani_g3_4038	4378884	4377757	375	GR 19
solani_g3_4039	4379579	4380586	335	GR 19
solani_g3_4040	4380734	4387672	2312	GR 19
solani_g3_4041	4387820	4392133	1437	GR 19
solani_g3_4042	4392136	4395144	1002	GR 19
solani_g3_4043	4395141	4395908	255	GR 19
solani_g3_4044	4396002	4397267	421	GR 19
solani_g3_4045	4397304	4398077	257	GR 19
solani_g3_4046	4398113	4410613	4166	GR 19
solani_g3_4047	4410636	4417145	2169	GR 19
solani_g3_4048	4417145	4421698	1517	GR 19
solani_g3_4049	4421695	4423206	503	GR 19
solani_g3_4050	4423223	4424167	314	GR 19
solani_g3_4051	4424172	4425272	366	GR 19
solani_g3_4052	4425332	4425448	38	GR 19
solani_g3_4053	4426523	4425492	343	GR 19
solani_g3_4058	4434194	4433274	306	GR 19
solani_g3_4059	4434313	4434996	227	GR 19
solani_g3_4060	4434993	4435385	130	GR 19
solani_g3_4061	4435349	4435489	46	GR 19
solani_g3_4062	4435563	4436408	281	GR 19
solani_g3_4067	4441231	4442250	339	
solani_g3_4068	4442396	4443940	514	
solani_g3_4080	4456455	4456273	60	
solani_g3_4082	4459333	4459181	50	
solani_g3_4086	4464043	4463909	44	
solani_g3_4099	4474562	4474449	37	
solani_g3_4101	4477126	4476029	365	GR 20 (HTI)
solani_g3_4102	4479512	4477176	778	GR 20 (HTI)
solani_g3_4103	4480826	4479927	299	GR 20 (HTI)
solani_g3_4104	4480969	4480823	48	GR 20 (HTI)
solani_g3_4105	4481775	4481392	127	GR 20 (HTI)
solani_g3_4106	4483327	4482569	252	GR 20 (HTI)
solani_g3_4107	4483431	4484387	318	GR 20 (HTI)
solani_g3_4108	4484517	4484870	117	GR 20 (HTI)
solani_g3_4109	4485558	4484941	205	GR 20 (HTI)
solani_g3_4110	4485863	4485982	39	GR 20 (HTI)

solani_g3_4115	4492250	4492369	39	
solani_g3_4121	4500223	4500345	40	
solani_g3_4122	4500553	4500425	42	
solani_g3_4126	4506405	4506662	85	
solani_g3_4140	4520427	4519453	324	
solani_g3_4146	4528477	4526582	631	GR 21
solani_g3_4147	4529747	4528842	301	GR 21
solani_g3_4148	4530148	4530447	99	GR 21
solani_g3_4149	4530491	4531585	364	GR 21
solani_g3_4150	4531597	4532286	229	GR 21
solani_g3_4151	4532451	4533434	327	GR 21
solani_g3_4152	4533546	4534340	264	GR 21
solani_g3_4153	4534439	4535437	332	GR 21
solani_g3_4154	4536284	4535628	218	GR 21
solani_g3_4155	4536839	4537198	119	GR 21
solani_g3_4167	4551945	4551097	282	GR 22
solani_g3_4168	4552821	4551991	276	GR 22
solani_g3_4169	4553842	4552883	319	GR 22
solani_g3_4170	4554233	4553886	115	GR 22
solani_g3_4171	4555582	4554572	336	GR 22
solani_g3_4172	4556805	4556158	215	GR 22
solani_g3_4173	4556950	4556792	52	GR 22
solani_g3_4184	4566679	4566029	216	
solani_g3_4185	4566780	4567679	299	
solani_g3_4189	4570945	4571415	156	
solani_g3_4204	4590152	4589742	136	
solani_g3_4205	4590359	4590180	59	
solani_g3_4207	4592486	4592599	37	
solani_g3_4211	4597753	4597583	56	
solani_g3_4216	4603675	4603794	39	
solani_g3_4220	4608055	4607279	258	
solani_g3_4227	4614923	4614789	44	
solani_g3_4228	4615163	4615044	39	
solani_g3_4239	4628445	4629422	325	
solani_g3_4240	4629422	4630141	239	
solani_g3_4241	4630146	4630298	50	
solani_g3_4242	4630623	4631051	142	
solani_g3_4248	4640394	4638157	745	
solani_g3_4249	4642528	4640828	566	
solani_g3_4263	4657891	4657766	41	
solani_g3_4265	4659494	4659673	59	
solani_g3_4279	4671788	4672213	141	
solani_g3_4292	4683485	4683204	93	GR 23 (HTI)
solani_g3_4293	4683840	4684538	232	GR 23 (HTI)
solani_g3_4294	4684535	4685431	298	GR 23 (HTI)
solani_g3_4295	4685415	4686032	205	GR 23 (HTI)
solani_g3_4296	4686029	4687177	382	GR 23 (HTI)
solani_g3_4297	4687531	4688820	429	GR 23 (HTI)
solani_g3_4303	4694754	4694906	50	
solani_g3_4304	4695214	4695059	51	

solani_g3_4305	4696067	4697131	354	GR 24 (HTI)
solani_g3_4306	4697094	4700093	999	GR 24 (HTI)
solani_g3_4307	4700095	4701744	549	GR 24 (HTI)
solani_g3_4308	4701887	4701741	48	GR 24 (HTI)
solani_g3_4310	4704352	4704233	39	GR 24 (HTI)
solani_g3_4312	4704964	4704752	70	GR 24 (HTI)
solani_g3_4313	4705314	4705069	81	GR 24 (HTI)
solani_g3_4319	4712483	4712163	106	GR 24 (HTI)
solani_g3_4320	4713371	4712496	291	GR 24 (HTI)
solani_g3_4324	4716481	4716365	38	GR 24 (HTI)
solani_g3_4330	4722263	4721748	171	GR 24 (HTI)
solani_g3_4331	4723248	4722283	321	GR 24 (HTI)
solani_g3_4332	4724174	4723308	288	GR 24 (HTI)
solani_g3_4333	4724730	4724257	157	GR 24 (HTI)
solani_g3_4334	4726139	4724742	465	GR 24 (HTI)
solani_g3_4335	4726271	4727155	294	GR 24 (HTI)
solani_g3_4343	4730595	4730437	52	GR 24 (HTI)
solani_g3_4347	4733877	4734377	166	GR 24 (HTI)
solani_g3_4348	4734395	4738582	1395	GR 24 (HTI)
solani_g3_4349	4738594	4739439	281	GR 24 (HTI)
solani_g3_4350	4739583	4739783	66	GR 24 (HTI)
solani_g3_4351	4739738	4739884	48	GR 24 (HTI)
solani_g3_4357	4746889	4745738	383	
solani_g3_4358	4747108	4746923	61	
solani_g3_4360	4747877	4748002	41	
solani_g3_4367	4754479	4754601	40	
solani_g3_4369	4757059	4755740	439	
solani_g3_4373	4760407	4760610	67	
solani_g3_4379	4766412	4766299	37	
solani_g3_4383	4770749	4770576	57	
solani_g3_4387	4773482	4773345	45	
solani_g3_4405	4791638	4791769	43	
solani_g3_4431	4825165	4825025	46	
solani_g3_4435	4827865	4827746	39	
solani_g3_4447	4838053	4839357	434	
solani_g3_4448	4839589	4839723	44	
solani_g3_4449	4840321	4840449	42	
solani_g3_4450	4840898	4841131	77	
solani_g3_4454	4844477	4845754	425	
solani_g3_4463	4854742	4854317	141	GR 25
solani_g3_4464	4854942	4855358	138	GR 25
solani_g3_4466	4856590	4857102	170	GR 25
solani_g3_4467	4858632	4857319	437	GR 25
solani_g3_4468	4859260	4858625	211	GR 25
solani_g3_4469	4860606	4859263	447	GR 25
solani_g3_4470	4860970	4860617	117	GR 25
solani_g3_4471	4861034	4861291	85	GR 25
solani_g3_4472	4861411	4862085	224	GR 25
solani_g3_4474	4863719	4863871	50	GR 25
solani_g3_4475	4864237	4864121	38	GR 25

solani_g3_4476	4864321	4864524	67	GR 25
solani_g3_4478	4866112	4865900	70	GR 25
solani_g3_4479	4866369	4866226	47	GR 25
solani_g3_4486	4873784	4873900	38	
solani_g3_4502	4888585	4888749	54	
solani_g3_4503	4888820	4889080	86	
solani_g3_4514	4901513	4901680	55	
solani_g3_4529	4919837	4919956	39	

Functional category

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Predicted hydrolase of the metallo-beta-lactamase superfamily, clustered with KDO2-Lipid A biosynthesis genes

hypothetical protein

Transcriptional regulator in cluster with plant-induced nitrilase

hypothetical protein

hypothetical protein

Transposase

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

DNA/RNA endonuclease G, NUC1

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

Ferredoxin

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

putative hydrolase

Hypothetical protein DUF1470, with CGNR zinc finger motif

Transposase

Putative Transposase within prophage

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

Integrase

hypothetical protein

DNA and RNA helicase

Transposase and inactivated derivatives

hypothetical protein

Urea ABC transporter, ATPase protein UrtE

Urea ABC transporter, ATPase protein UrtD

Urea ABC transporter, permease protein UrtC

Urea ABC transporter, permease protein UrtB

Urea ABC transporter, urea binding protein
Transcriptional regulator, GntR family
Urea carboxylase (EC 6.3.4.6)
Allophanate hydrolase (EC 3.5.1.54)
putative isochorismatase family protein
hypothetical protein
hypothetical protein
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hypothetical protein
Putative large exoprotein involved in heme utilization or adhesion of ShlA/HecA/FhaA family
hypothetical protein
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Long-chain-fatty-acidCoA ligase (EC 6.2.1.3)
hypothetical protein
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hypothetical protein
putative lipoprotein
Methyl-accepting chemotaxis protein I (serine chemoreceptor protein)
hypothetical protein
hypothetical protein
Cystathionine beta-synthase (EC 4.2.1.22)
Cystathionine gamma-lyase (EC 4.4.1.1)
Ferric hydroxamate outer membrane receptor FhuA
hypothetical protein
hypothetical protein
Bipolar DNA helicase
hypothetical protein
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Phage tail fiber protein
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probable glucosyl transferase
hypothetical protein
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Superfamily II DNA/RNA helicases, SNF2 family
putative; ORF located using Glimmer/Genemark
Outer membrane protein and related peptidoglycan-associated (lipo)proteins
hypothetical protein
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hypothetical protein
glutamine ABC transporter, ATP-binding protein
Glutamate Aspartate transport system permease protein GltK (TC 3.A.1.3.4)
Glutamate Aspartate transport system permease protein GltJ (TC 3.A.1.3.4)
probable solute-binding protein
transcriptional regulator, LysR family
NAD-specific glutamate dehydrogenase (EC 1.4.1.2); NADP-specific glutamate dehydrogenase (EC 1.4.1.4)
Glutamate-aspartate carrier protein
Aspartate aminotransferase (EC 2.6.1.1)
Dimethylmenaquinone methyltransferase family protein
transcriptional regulator, LysR family
hypothetical protein
hypothetical protein
hypothetical protein
Uronate isomerase (EC 5.3.1.12)
Oligogalacturonide transporter
Putative D-mannonate oxidoreductase (EC 1.1.1.57)
peptidase S14, ClpP
hypothetical protein
Aconitate hydratase 2 (EC 4.2.1.3)
Aconitate hydratase 2 (EC 4.2.1.3)
hypothetical protein
Putative integral membrane protein
hypothetical protein
Sensor kinase CitA, DpiB (EC 2.7.3.-)
Transcriptional regulatory protein CitB, DpiA
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
aminotransferase, class I and II

probable multidrug resistance protein

hypothetical protein

Carbamoyltransferase

conserved hypothetical protein

hypothetical protein

Nitrogen assimilation regulatory protein Nac

major facilitator superfamily MFS 1

Dimethylmenaquinone methyltransferase

putative transferase protein

hypothetical protein

Redox-sensing transcriptional regulator QorR

Alcohol dehydrogenase (EC 1.1.1.1)

transcriptional regulator, MAR family with acetyltransferase activity

gene 15 protein

Antibiotic biosynthesis monooxygenase

Thioredoxin reductase (EC 1.8.1.9)

hypothetical protein

Transcriptional regulator, TetR family

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

H(+)/Cl(-) exchange transporter ClcA

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

NAD(P)H oxidoreductase YRKL (EC 1.6.99.-) Putative NADPH-quinone reductase (modulator of drug activity B) F

hypothetical protein

Transcriptional regulator, LysR family

hypothetical protein

hypothetical protein

putative transcriptional regulator

hypothetical protein

hypothetical protein

hypothetical protein

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hypothetical protein
phosphopantetheinyl transferase
Malonyl CoA-acyl carrier protein transacylase (EC 2.3.1.39)
Malonyl CoA-acyl carrier protein transacylase (EC 2.3.1.39)
Malonyl CoA-acyl carrier protein transacylase (EC 2.3.1.39); Enoyl-[acyl-carrier-protein] reductase [FMN] (EC 1.3.1.13)
hypothetical protein
polyketide synthase
polyketide synthase
hypothetical protein
hypothetical protein
acetyl carrier protein
Malonyl CoA-acyl carrier protein transacylase (EC 2.3.1.39), polyketide synthase
luciferase-like monooxygenase family protein
polyketide synthase
Monooxygenase, flavin-binding family
polyketide synthase
hypothetical protein
3-oxoacyl-[acyl-carrier-protein] synthase, KASII (EC 2.3.1.41)
Hydroxymethylglutaryl-CoA synthase (EC 2.3.3.10)
Methylglutaconyl-CoA hydratase (EC 4.2.1.18)
hypothetical protein
Enoyl-CoA hydratase (EC 4.2.1.17)
hypothetical protein
transcriptional regulator, XRE family
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
LSU ribosomal protein L18p (L5e)
arginine/ornithine transport ATP-binding protein
ABC-type amino acid transport system, permease component
hypothetical protein
Carbon-nitrogen hydrolase
4,5-dihydroxyphthalate decarboxylase (EC 4.1.1.55)
Transcriptional regulator, GntR family domain / Aspartate aminotransferase (EC 2.6.1.1)
hypothetical protein
hypothetical protein
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Glycerol dehydrogenase (EC 1.1.1.6)
hypothetical protein

Cystine-binding periplasmic protein precursor
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Outer membrane vitamin B12 receptor BtuB
hypothetical protein
Tail fiber assembly protein
Phage tail fiber protein
hypothetical protein
Transposase
Transposase
Phage tail fiber protein
hypothetical protein
Beta-lactamase (EC 3.5.2.6)
hypothetical protein
hypothetical protein
Malate Na(+) symporter
hypothetical protein
Dimethylmenaquinone methyltransferase
hypothetical protein
Transcriptional regulator, LysR family
hypothetical protein
hypothetical protein
hipa protein
hypothetical protein
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hypothetical protein
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hypothetical protein
NADP oxidoreductase, coenzyme F420-dependent
Putative outer membrane protein
hypothetical protein
Putative acetyltransferase
Transporter, MFS superfamily
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
SAM-dependent methyltransferase
3-oxoacyl-[ACP] synthase
1-acyl-sn-glycerol-3-phosphate acyltransferase
Acyl carrier protein (ACP1)
Acyl carrier protein
hypothetical protein
Acyl-CoA synthetase, AMP-(fatty) acid ligase
(3R)-hydroxymyristoyl-[ACP] dehydratase (EC 4.2.1.-)

Glycosyl transferase / Lysophospholipid acyltransferase
4-hydroxybenzoyl-CoA thioesterase domain protein
Putative transmembrane protein
membrane protein, exporter
hypothetical protein
3-oxoacyl-[ACP] synthase (EC 2.3.1.41) FabV like
3-hydroxydecanoyl-[ACP] dehydratase (EC 4.2.1.60)
3-oxoacyl-[ACP] reductase (EC 1.1.1.100)
3-oxoacyl-[ACP] synthase (EC 2.3.1.41)
hypothetical protein
hypothetical protein
hypothetical protein
LSU ribosomal protein L34p
hypothetical protein
hypothetical protein
hypothetical protein
PAS/PAC domain
hypothetical protein
hypothetical protein
Protein of unknown function DUF81
hypothetical protein
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Glycine cleavage system transcriptional activator GcvA
Permease of the drug/metabolite transporter (DMT) superfamily
3-polyprenyl-4-hydroxybenzoate carboxy-lyase (EC 4.1.1.-)
Translation elongation factor Tu
hypothetical protein
Molybdopterin-guanine dinucleotide biosynthesis protein MobB
hypothetical protein
3-oxoacyl-[acyl-carrier protein] reductase (EC 1.1.1.100)
hypothetical protein
hypothetical protein
hypothetical protein
Putative cytochrome d ubiquinol oxidase subunit III (EC 1.10.3.-) (Cytochrome bd-I oxidase subunit III)
glutathione-dependent formaldehyde-activating, GFA
Aerobic respiration control sensor protein arcB (EC 2.7.3.-)
hypothetical protein
hypothetical protein
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hypothetical protein
hypothetical protein

Protein containing transglutaminase-like domain, putative cysteine protease
Protein containing domains DUF403
Protein containing domains DUF404, DUF407
hypothetical protein
PTS system, beta-glucoside-specific IIB component (EC 2.7.1.69) / PTS system, beta-glucoside-specific IIC comp
hypothetical protein
Integrase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Ner-like regulatory protein
hypothetical protein
Replicative helicase RepA
bacteriophage P4 DNA primease
Transcriptional regulator, AlpA like
Phage DNA binding protein
Putative cytoplasmic protein
DNA-binding protein
hypothetical protein
Serine/threonine phosphatase PPP (EC 3.1.3.16)
hypothetical protein
Integrase
Integrase
Type I restriction-modification system, DNA-methyltransferase subunit M (EC 2.1.1.72)
Type I restriction-modification system, specificity subunit S (EC 3.1.21.3)
Type I restriction-modification system, restriction subunit R (EC 3.1.21.3)
Putative DNA-binding protein in cluster with Type I restriction-modification system
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1,2-dihydroxy-3-keto-5-methylthiopentene dioxygenase (EC 1.13.11.54)
hypothetical protein
Transcriptional regulator, LysR family
Vanillate O-demethylase oxygenase subunit (EC 1.14.13.82)
Flavodoxin reductases (ferredoxin-NADPH reductases) family 1; Vanillate O-demethylase oxidoreductase (EC 1.1
Salicylate hydroxylase (EC 1.14.13.1)
hypothetical protein
Acetyltransferase
transcriptional regulator, AraC family
Dehydrogenases with different specificities (related to short-chain alcohol dehydrogenases)

hypothetical protein
hypothetical protein
short-chain dehydrogenase/reductase SDR
Integrase
Putative uncharacterized protein STY4534 (Putative uncharacterized protein)
hypothetical protein
hypothetical protein
Chromosome partition protein smc
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
protease, putative
Aldehyde dehydrogenase (EC 1.2.1.3)
Fumarate reductase flavoprotein subunit (EC 1.3.99.1)
30S ribosomal protein S1
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Type I restriction-modification system, specificity subunit S (EC 3.1.21.3)
Type I restriction-modification system, DNA-methyltransferase subunit M (EC 2.1.1.72)
Type I restriction-modification system, restriction subunit R (EC 3.1.21.3)
Transcriptional regulator, TetR family
hypothetical protein
Transposase
hypothetical protein
Phosphatidylglycerophosphatase B (EC 3.1.3.27)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Glutamine ABC transporter, periplasmic glutamine-binding protein (TC 3.A.1.3.2)
amino acid ABC transporter, permease protein
Amino acid ABC transporter, permease protein, 3-TM region, His/Glu/Gln/Arg/opine
ABC-type polar amino acid transport system, ATPase component
Endoribonuclease L-PSP
Transcriptional regulator, IclR family
D-serine deaminase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Transposase
Transposase
Transposase
hypothetical protein
hypothetical protein

[illegible]

[illegible]

Phospholipase
putative lipoprotein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Phosphopantetheinyl transferase
HlyD family secretion protein
ABC transporter, ATP-binding protein
protein of unknown function DUF214
hypothetical protein
omega-3 polyunsaturated fatty acid synthase subunit, PfaA/polyketide synthase
beta-ketol acid synthase/polyketide synthase
Enoyl-[acyl-carrier-protein] reductase [FMN] (EC 1.3.1.9); Glutamate-1-semialdehyde aminotransferase (EC 5.4.3.1)
3-oxoacyl-[acyl-carrier protein] reductase (EC 1.1.1.100)
polyketide synthase
Possible hydrolase
Long-chain-fatty-acidCoA ligase (EC 6.2.1.3)/non-ribosomal peptide synthase
Long-chain-fatty-acidCoA ligase (EC 6.2.1.3)/non-ribosomal peptide synthase
Malonyl CoA-acyl carrier protein transacylase (EC 2.3.1.39)/polyketide synthase
non-ribosomal peptide synthase (C domain)
ABC Transporter, ATP-binding protein
Permease component of an ABC transporter complex
hypothetical protein
hypothetical protein
Probable transcription regulator protein
Putative transmembrane protein
Aspartate aminotransferase (EC 2.6.1.1)
hypothetical protein
probable hydrolase
transcriptional regulator
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
periplasmic binding protein
Ferrichrome-iron receptor
hypothetical protein
hypothetical protein
hypothetical protein
probable short chain dehydrogenase
Transcriptional regulator, AraC family
hypothetical protein
Transposase
hypothetical protein

hypothetical protein
hypothetical protein
hypothetical protein
conserved hypothetical protein
Integral membrane protein
putative esterase (fragment)
Transcriptional regulator
hypothetical protein
Alcohol dehydrogenase (EC 1.1.1.1)
ThiJ/Pfpl family protein
Aldo-keto reductase
4-carboxymuconolactone decarboxylase (EC 4.1.1.44)
putative amidohydrolase/decarboxylase
hypothetical protein
Regulatory protein SoxS
short-chain dehydrogenase/reductase SDR
short chain dehydrogenase
UPF0028 protein YchK
Oxidoreductase (EC 1.1.1.-)
virulence regulating protein
orf, conserved hypothetical protein
hypothetical protein
hypothetical protein
Transcriptional regulator, LysR family
Phosphonate ABC transporter permease protein phnE1 (TC 3.A.1.9.1)
DNA-binding protein, CopG family
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Thiol:disulfide interchange protein DsbG precursor
hypothetical protein
hypothetical protein
Iron(III) ABC transporter, solute-binding protein
Molybdenum-binding periplasmic protein
Methionine ABC transporter permease protein
hypothetical protein
Putative transmembrane protein
Exoenzymes regulatory protein aepA precursor
hypothetical protein
hypothetical protein
hypothetical protein
IS, phage, Tn; Transposon-related functions
D-Galactonate repressor DgoR
2-dehydro-3-deoxygalactonokinase (EC 2.7.1.58)
2-dehydro-3-deoxyphosphogalactonate aldolase (EC 4.1.2.21)
Galactonate dehydratase (EC 4.2.1.6)
D-galactonate transporter
hypothetical protein
hypothetical protein

DNA-cytosine methyltransferase (EC 2.1.1.37)
Exonuclease SbcC
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
putative mobilization protein mobC
Inner membrane protein forms channel for type IV secretion of T-DNA complex (VirB10)
Inner membrane protein forms channel for type IV secretion of T-DNA complex (VirB10)
hypothetical protein
NAD(P)H oxidoreductase YRKL (EC 1.6.99.-) Putative NADPH-quinone reductase (modulator of drug activity B) F
Aldo-keto reductase
L-arabinolactonase (EC 3.1.1.15)
Integral membrane protein
hypothetical protein
Probable transcription regulator protein of MDR efflux pump cluster
transcriptional regulator, XRE family
putative cytoplasmic protein
Rhs-family protein
hypothetical protein
hypothetical protein
hypothetical protein
Protein of unknown function DUF450
putative regulator
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Cytosine permease
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Metallo-beta-lactamase superfamily protein PA0057
Redox-sensing transcriptional regulator QorR, putative
hypothetical protein
L-Proline/Glycine betaine transporter ProP
hypothetical protein
Asp-tRNAAsn/Glu-tRNA^{Gln} amidotransferase A subunit and related amidases
hypothetical protein
hypothetical protein
Transcriptional regulator, GntR family
hypothetical protein
hypothetical protein

Phosphohydrolase (MutT/nudix family protein)

hypothetical protein

hypothetical protein

hypothetical protein

hypothetical protein

proteinase inhibitor

hypothetical protein

hypothetical protein

Conservation in other *Dickeyas*

D. zeae 586 D. paradisiaca 703 D. chrysanthemi 1591

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onent (EC 2.7.1.69) / PTS system, beta-glucoside-specific IIA component (EC 2.

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Conservation in other bacteria

Comment

Photorhabdus asymbiotica (39%)

Pectobacterium wasabiae (59%)

2 proteins in D. dadantii

Achromobacter xylosoxidans (56%)

Aeromonas veronii (50%)

Yersinia kristensenii (92%)

Escherichia coli MS 107-1 (96%)

Enterobacteria phage vB KleM-RaK2 (41%)

Pectobacterium carotovorum subsp. carotovorum (71%)

Pseudomonas viridiflava (84%)

Pseudomonas fluorescens (75%)

Escherichia coli XH001 (95%)

Escherichia albertii (94%)

Pantoea ananatis (89%)

Klebsiella pneumoniae (84%)

Pseudomonas fluorescens (62%)

Escherichia coli KTE212 (98%)

Serratia plymuthica (93%)

Salmonella enterica subsp. enterica (97%)

Salmonella enterica subsp. enterica (92%)

Enterobacter radicincitans (96%)

Enterobacter radicincitans (90%)

Enterobacter radicincitans (97%)
Enterobacter radicincitans (96%)
Salmonella enterica subsp. enterica serovar Typhi (89%)
Enterobacter radicincitans (86%)
Advenella kashmirensis (61%)

Escherichia coli KTE88 (72%)

Pectobacterium wasabiae (78%)
Photorhabdus asymbiotica (71%)
Brenneria sp. EniD312 (48%)

Serratia marcescens (82%)
Brenneria sp. EniD312 (89%)

2 proteins in D. dadantii

Cronobacter dublinensis (67%)
Pantoea sp. GM01 (93%)

Brenneria sp. EniD312 (71%)
Pectobacterium carotovorum subsp. brasiliensis (71%)

Brenneria sp. EniD312 (83%)
Pectobacterium carotovorum subsp. carotovorum WPP14 (84%)
Rahnella sp. Y9602 (67%)

Pantoea sp. Sc1 (69%)
Pseudomonas sp. HYS (93%)
Pseudomonas sp. HYS (82%)

Enterobacter radicincitans (74%)

Pectobacterium carotovorum subsp. carotovorum WPP14] (51%)
Shigella dysenteriae (74%)

Pectobacterium atrosepticum (91%)

Serratia odorifera DSM 4582 (66%)	2 proteins in D. solani
Pectobacterium atrosepticum SCRI1043 (81%)	2 proteins in D. solani
Brenneria sp. EniD312 (80%)	2 proteins in D. dadantii

Vibrio rotiferianus (42%)
Vibrio rotiferianus (37%)

Pectobacterium atrosepticum SCRI1043 (64%)
Pectobacterium atrosepticum SCRI1043 (62%)

Pectobacterium carotovorum subsp. carotovorum PC (44%)	2 proteins in D. dadantii
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Serratia sp. M24T3 (53%)
Pantoea agglomerans (71%)

Photobacterium luminescens subsp. laumondii (48%)
Burkholderia rhizoxinica (58%)
Burkholderia sp. (44%)
Serratia odorifera (48%)
Teredinibacter turnerae (41%)
Teredinibacter turnerae (72%)
Teredinibacter turnerae (50%)
Teredinibacter turnerae (40%)

Agrobacterium tumefaciens (68%)

Pectobacterium atrosepticum (45%)
Yersinia frederiksenii (44%)

Pantoea stewartii (43%)
Hafnia alvei (64%)
Enterobacter radicincitans (89%)
Enterobacter radicincitans (97%)
Enterobacter radicincitans (97%)
Pseudomonas syringae pv. *maculicola* (53%)
Pectobacterium carotovorum subsp. *brasiliensis* (91%)
Pectobacterium wasabiae (87%)
Yersinia pestis (63%)
Alicyclophilus denitrificans (73%)
Variovorax paradoxus (66%)
Alicyclophilus denitrificans (56%)
Alicyclophilus denitrificans (58%)
Acidovorax citrulli (57%)
Erwinia billingiae (78%)
Acinetobacter ursingii (73%)
Acinetobacter ursingii (71%)
Acinetobacter ursingii (76%)
Acinetobacter ursingii (60%)

Escherichia hermannii (62%)
Klebsiella oxytoca (80%)
Enterobacter cloacae (72%)
Yersinia bercovieri (32%)

Klebsiella pneumoniae (91%)
Yersinia kristensenii (81%)

Planococcus halocryophilus (40%)

Vibrio cholerae (39%)
Vibrio cholerae (43%)

Burkholderia cepacia (48%)

Providencia burhodogranariae (49%)
Vibrio cyclitrophicus (53%)
Yersinia aldovae (35%)
Pontibacter sp. (39%)

Cupriavidus necator (40%)
Pseudomonas sp. (58%)
Herbaspirillum seropedicae (61%)
Cupriavidus necator (56%)

Pectobacterium carotovorum subsp. *carotovorum* (77%)
Pseudomonas psychrotolerans (74%)
~~*Pseudomonas luscovaginatae* (74%)~~
Serratia sp (44%)
Rhizobium sp. (90%)
Pseudomonas chlororaphis (87%)

Burkholderia terrae (90%)
Serratia marcescens (62%)

Salmonella enterica subsp. *enterica* (68%)
Aeromonas salmonicida (44%)

Enterobacter asburiae (70%)
Tolomonas auensis (56%)
Enterobacter asburiae (68%)

Serratia proteamaculans (49%)
Rahnella sp. (65%)

Escherichia coli RN587 (82%)
Halomonas titanicae (70%)
Pectobacterium atrosepticum (63%)

Enterobacteriaceae bacterium (67%)
Rhodovulum sp. (74%)

Photorhabdus asymbiotica (79%)
Pantoea vagans (65%)
Pseudomonas viridiflava (59%)

2 proteins in D. solani
2 proteins in D. solani

Serratia odorifera (77%)
Yersinia mollaretii (69%)

Paenibacillus polymyxa (31%)

Pseudomonas sp. (29%)
Teredinibacter turnerae (38%)
Serratia odorifera (78%)
Serratia odorifera (77%)
Serratia odorifera (80%)
Serratia odorifera (73%)
Serratia odorifera (69%)
Serratia odorifera (74%)
Serratia odorifera (81%)
Serratia odorifera (92%)

Serratia odorifera (71%)
Serratia odorifera (87%)
Serratia odorifera (69%)
Serratia odorifera (92%)
Serratia odorifera (70%)

Serratia odorifera (81%)
Serratia odorifera (89%)
Serratia odorifera (86%)

Serratia odorifera (87%)
Photorhabdus asymbiotica (47%)
Pectobacterium carotovorum subsp. brasiliensis (71%)

Yersinia rohdei (78%)
Enterobacteriaceae bacterium (95%)
Pantoea sp. (88%)
Erwinia billingiae (78%)
Erwinia billingiae (84%)
Pantoea sp. (83%)
Pantoea sp. (78%)
Erwinia billingiae (71%)
Salmonella enterica subsp. enterica (54%)

Pectobacterium wasabiae (66%)

Pectobacterium wasabiae (71%)

Serratia marcescens (71%)

Pectobacterium carotovorum subsp. *carotovorum* (51%)

Enterobacter radicincitans (53%)

Enterobacter sp. (100%)

Pantoea sp. (92%)

Burkholderia pseudomallei (45%)

Pantoea sp. (67%)

Bacillus cytotoxicus (49%)

Pelosinus fermentans (57%)

Cupriavidus necator (52%)

Serratia proteamaculans (69%)

Salmonella enterica subsp. *enterica* (61%)

Burkholderia graminis (54%)

Vibrio furnissii (57%)

Brenneria sp. (73%)

Brenneria sp. (76%)

Brenneria sp. (71%)

Pectobacterium carotovorum subsp. *brasiliensis* (75%)

Pectobacterium carotovorum subsp. *brasiliensis* (85%)

Pectobacterium carotovorum subsp. *brasiliensis* (83%)

Pectobacterium carotovorum subsp. *brasiliensis* (70%)

Pectobacterium atrosepticum (67%)

Pectobacterium atrosepticum (51%)

Pectobacterium wasabiae (78%)
Brenneria sp. (88%)
Pectobacterium carotovorum subsp. brasiliensis (80%)
Pectobacterium wasabiae (74%)
Brenneria sp. (77%)
Pectobacterium carotovorum subsp. brasiliensis (77%)
Pectobacterium carotovorum subsp. brasiliensis (73%)
Pectobacterium wasabiae (86%)
Pectobacterium wasabiae (90%)

Photorhabdus luminescens (100%)

Methylobacterium nodulans (62%)

Escherichia coli STEC (41%)

Klebsiella oxytoca (59%)
Rahnella aquatilis (65%)
Pectobacterium wasabiae (92%)
Brenneria sp. (98%)

2 proteins in D. dadantii

Rhizobium sp. (78%)

Pectobacterium carotovorum subsp. brasiliensis (87%)
Pectobacterium carotovorum subsp. carotovorum (60%)
Brenneria sp. (87%)

2 proteins in D. dadantii

2 proteins in D. dadantii

Pectobacterium carotovorum subsp. carotovorum (87%)

Enterobacter radicincitans (83%)
Enterobacter radicincitans (90%)
Enterobacter radicincitans (95%)

Pantoea sp. (69%)

Pectobacterium wasabiae (97%)
Glaciecola arctica (44%)
Glaciecola arctica (56%)
Glaciecola arctica (52%)
Photorhabdus luminescens (92%)
Photorhabdus luminescens (74%)
Photorhabdus luminescens (67%)
Pectobacterium wasabiae (91%)
Photorhabdus luminescens (89%)
Pectobacterium wasabiae (83%)
Pectobacterium wasabiae (95%)
Edwardsiella ictaluri (93%)
Pectobacterium wasabiae (95%)

Pectobacterium carotovorum subsp. carotovorum (49%)

Erwinia amylovora (89%)
Yersinia kristensenii (82%)
Citrobacter rodentium (90%)
Shewanella frigidimarina (48%)
Yersinia kristensenii (91%)
Salmonella enterica subsp. enterica (85%)
Citrobacter sp. (76%)
Pectobacterium carotovorum subsp. brasiliensis (64%)

Yersinia pseudotuberculosis (50%)

Pectobacterium carotovorum subsp. carotovorum (40%)
Pectobacterium carotovorum subsp. carotovorum (52%)

Pectobacterium carotovorum subsp. carotovorum (85%)

Erwinia tasmaniensis (66%)
Erwinia sp. (77%)
Erwinia tasmaniensis (59%)
Enterobacter cloacae (75%)

Pectobacterium carotovorum subsp. carotovorum (89%)
Burkholderia cenocepacia (75%)
Burkholderia cenocepacia (84%)

Pectobacterium wasabiae (70%)
Acinetobacter calcoaceticus (88%)
Burkholderia cenocepacia (83%)
Pectobacterium wasabiae (96%)

Burkholderia cenocepacia (56%)
Escherichia coli (51%)
Burkholderia ambifaria (43%)
Pectobacterium carotovorum subsp. *carotovorum* (96%)

Cellulophaga algicola (33%)
Brenneria sp. (51%)
Rahnella sp. (79%)
Pantoea sp. (73%)
Rahnella aquatilis (78%)
Rahnella aquatilis (97%)

2 proteins in *D. dadantii*

Pectobacterium carotovorum subsp. *carotovorum* (76%)
Escherichia coli (81%)
Shigella flexneri (88%)
Escherichia coli (84%)
Burkholderia graminis (86%)

Pantoea stewartii (88%)
Pantoea sp. (40%)
Pantoea sp. (45%)

Brenneria sp. (83%)
Brenneria sp. (82%)
Brenneria sp. (81%)
Brenneria sp. (79%)
Pseudomonas psychrotolerans (87%)
Brenneria sp. (75%)
Brenneria sp. (71%)

Pectobacterium carotovorum subsp. *carotovorum* (49%)
Pectobacterium carotovorum subsp. *carotovorum* (60%)

Yersinia enterocolitica (94%)
Yersinia pseudotuberculosis (97%)
Pantoea sp. (91%)
Pectobacterium wasabiae (91%)

Pectobacterium carotovorum subsp. carotovorum (99%)
Alteromonas sp. (43%)
Alteromonas macleodii (83%)
Pectobacterium carotovorum subsp. brasiliensis (51%)
Bordetella bronchiseptica (57%)
Klebsiella pneumoniae (47%)
Yersinia bercovieri (95%)

Pectobacterium wasabiae (74%)

Pantoea ananatis (66%)
Pectobacterium wasabiae (63%)
Pectobacterium carotovorum subsp. brasiliensi (66%)

Acinetobacter ursingii (50%)
Pectobacterium carotovorum subsp. carotovorum (91%)
Pectobacterium carotovorum subsp. carotovorum (83%)

Pectobacterium carotovorum subsp. carotovorum (70%)

Ralstonia solanacearum (85%)
Pseudomonas syringae pv. tomato (80%)
Erwinia billingiae (64%)
Pseudomonas fragi (84%)
Sphingomonas sp. (64%)
Sphingomonas sp. (69%)
Ralstonia solanacearum (45%)

2 proteins in D. solani
2 proteins in D. solani

Salmonella enterica subsp. enterica (76%)

Rhizobium mesoamericanum (73%)

Sinorhizobium fredii (47%)
Sinorhizobium meliloti (49%)
Ralstonia solanacearum (66%)
Pseudomonas syringae pv. tabaci (56%)
Myxococcus xanthus (34%)
Klebsiella oxytoca (75%)

Stappia aggregata (41%)
Oceanibulbus indolifex (26%)
Hahella chejuensis (36%)
Bacillus cereus (28%)

Plesiocystis pacifica (49%)

Rhizobium etli (63%)

Pectobacterium wasabiae (65%)

Xanthomonas translucens pv. graminis (49%)

Pectobacterium wasabiae (72%)
Serratia plymuthica (48%)
Serratia plymuthica (45%)
Klebsiella oxytoca (59%)

Serratia marcescens (60%)
Serratia marcescens (58%)
Brenneria sp. (69%)

Acinetobacter baumannii (45%)
Acinetobacter baumannii (46%)
Serratia plymuthica (50%)
Serratia plymuthica (68%)
Serratia odorifera (73%)
Klebsiella oxytoca (40%)

Klebsiella oxytoca (41%)

Brenneria sp. (86%)

2 proteins in D. solani

2 proteins in D. solani

Pectobacterium carotovorum subsp. brasiliensis (73%)
Pectobacterium carotovorum subsp. carotovorum (70%)
Pantoea ananatis (76%)
Pectobacterium atrosepticum (73%)
Pectobacterium wasabiae (83%)
Vibrio cholerae (59%)
Pantoea ananatis (49%)
Coprobacillus sp. (34%)

Collimonas fungivorans (42%)
Serratia plymuthica (63%)
Serratia sp. (69%)
Serratia sp. (71%)
Serratia sp. (31%)
Serratia sp. (58%)
Photorhabdus asymbiotica (64%)
Serratia plymuthica (77%)
Serratia sp. (79%)
Serratia sp. (67%)
Xenorhabdus bovienii (63%)
Serratia plymuthica (52%)
Serratia sp. (60%)
Serratia plymuthica (57%)
Serratia sp. (50%)
Serratia plymuthica (73%)
Xenorhabdus bovienii (67%)
Brenneria sp. (70%)
Serratia odorifera (56%)
Sinorhizobium fredii (75%)
Sinorhizobium fredii (81%)
Alicyclophilus denitrificans (77%)
Pseudogulbenkiania ferrooxidans (78%)
Pseudomonas sp. (70%)
Pantoea sp. (58%)
Pantoea sp. (73%)

Pantoea sp. (74%)
Pantoea sp. (85%)
Pantoea sp. (60%)

Pectobacterium atrosepticum (91%)
Pectobacterium atrosepticum (95%)
Pectobacterium atrosepticum (93%)
Serratia plymuthica (91%)
Salmonella enterica subsp. enterica (89%)

Alishewanella jeotgali (64%)
Serratia plymuthica (66%)
Pectobacterium carotovorum subsp. brasiliensis (66%)
Xylella fastidiosa (77%)
Rhizobium leguminosarum (77%)
Ralstonia solanacearum (86%)
Ralstonia solanacearum (84%)
Rhizobium sp. (88%)
Rhizobium leguminosarum (77%)
Rhizobium sp. (76%)
Actinobacillus succinogenes (39%)
Cronobacter condimenti (50%)
Beijerinckia indica (67%)
Ralstonia solanacearum (87%)
Cupriavidus necator (66%)
Cupriavidus sp. (68%)
Klebsiella sp. (81%)
Escherichia coli (33%)

Pectobacterium carotovorum subsp. carotovorum (75%)
Rahnella aquatilis (74%)
Pantoea ananatis (86%)
Pectobacterium carotovorum subsp. carotovorum (93%)
Pectobacterium wasabiae (97%)

Pectobacterium atrosepticum (58%)

Pectobacterium carotovorum subsp. carotovorum (66%)

Enterobacter sp. (78%)
Pantoea ananatis (55%)
Enterobacter sp. (73%)

Variovorax sp. (54%)
Pectobacterium carotovorum subsp. carotovorum (84%)

Escherichia blattae (47%)
Shigella sonnei (87%)
Pectobacterium carotovorum subsp. brasiliensis (99%)
Pectobacterium atrosepticum (97%)
Pectobacterium carotovorum subsp. brasiliensis (96%)
Pectobacterium carotovorum subsp. brasiliensis (99%)
Pectobacterium carotovorum subsp. brasiliensis (98%)

Yersinia rohdei (58%)

Serratia odorifera (99%)
Serratia odorifera (98%)
Serratia odorifera (95%)

Pectobacterium carotovorum subsp. carotovorum (81%)
Pectobacterium carotovorum subsp. carotovorum (85%)
Pectobacterium carotovorum subsp. carotovorum (93%)
Pectobacterium wasabiae (63%)

2 proteins in D. solani
2 proteins in D. solani

Klebsiella oxytoca (71%)
Klebsiella pneumoniae (78%)
Pectobacterium carotovorum subsp. carotovorum (91%)
Enterobacter radicincitans (94%)
Enterobacter radicincitans (91%)
Erwinia billingiae (87%)
Achromobacter arsenitoxydans (69%)
Pectobacterium carotovorum subsp. carotovorum (74%)
Pectobacterium carotovorum subsp. carotovorum (84%)
Salmonella enterica subsp. enterica (65%)
Pectobacterium carotovorum subsp. carotovorum (80%)
Escherichia coli (61%)
Brenneria sp. (86%)
Klebsiella pneumoniae (67%)

Pectobacterium wasabiae (45%)

Brenneria sp. (78%)

2 proteins in D. dadantii

Pectobacterium carotovorum subsp. carotovorum (36%)
Pectobacterium carotovorum subsp. carotovorum (73%)
Starkeya novella (73%)
Serratia plymuthica (62%)
Pantoea sp. (91%)
Pantoea sp. (82%)
Pantoea sp. (80%)
Pantoea sp. (82%)

Pantoea sp. (81%)

Rahnella aquatilis (90%)
Pectobacterium atrosepticum (54%)

Serratia marcescens (80%)

Gene ID RAST	Locus tag	Gene ID ASAP	Start
3937_g3_0005			4209
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3937_g3_3015	Dda3937_04635	ABF-0047193	3097945
3937_g3_3021			3102747
3937_g3_3022			3103781
3937_g3_3023			3103921
3937_g3_3028	Dda3937_03359	ABF-0019619	3111804
3937_g3_3029	Dda3937_03953	ABF-0020504	3112148
3937_g3_3030	Dda3937_03954	ABF-0020505	3113752
3937_g3_3031	Dda3937_03955	ABF-0020506	3114347

3937_g3_3032	Dda3937_03956	ABF-0020507	3117730
3937_g3_3033			3119073
3937_g3_3034			3119617
3937_g3_3044			3130552
3937_g3_3045	Dda3937_04645	ABF-0047204	3131407
3937_g3_3046	Dda3937_02773	ABF-0018746	3135728
3937_g3_3047	Dda3937_02772	ABF-0018745	3136147
3937_g3_3048	Dda3937_02771	ABF-0018744	3138014
3937_g3_3051	Dda3937_02768	ABF-0018740	3139329
3937_g3_3053	Dda3937_02766	ABF-0018737	3140296
3937_g3_3054	Dda3937_02765	ABF-0018735	3140638
3937_g3_3062	Dda3937_02757	ABF-0018725	3144145
3937_g3_3069	Dda3937_02749	ABF-0018716	3152826
3937_g3_3072	Dda3937_02746	ABF-0018713	3154529
3937_g3_3075			3157241
3937_g3_3076	Dda3937_02711	ABF-0018655	3157560
3937_g3_3079	Dda3937_04167	ABF-0020802	3160573
3937_g3_3080	Dda3937_04168	ABF-0020803	3162798
3937_g3_3081	Dda3937_04169	ABF-0020804	3163680
3937_g3_3082	Dda3937_01877	ABF-0017451	3165374
3937_g3_3083	Dda3937_04172	ABF-0020809	3166103
3937_g3_3084	Dda3937_04173	ABF-0020810	3166465
3937_g3_3085	Dda3937_04174	ABF-0020811	3167795
3937_g3_3086	Dda3937_04175	ABF-0020812	3168241
3937_g3_3087	Dda3937_04176	ABF-0020813	3168404
3937_g3_3088	Dda3937_04179	ABF-0020816	3171273
3937_g3_3089	Dda3937_01879	ABF-0017456	3174896
3937_g3_3090	Dda3937_01878	ABF-0017452	3188250
3937_g3_3091	Dda3937_01877	ABF-0017451	3188506
3937_g3_3092	Dda3937_01876	ABF-0017450	3189065
3937_g3_3094			3189465
3937_g3_3096			3191278
3937_g3_3097			3192855
3937_g3_3098			3193719
3937_g3_3099	Dda3937_01871	ABF-0017438	3195214
3937_g3_3100	Dda3937_01870	ABF-0017437	3195531
3937_g3_3101			3195666
3937_g3_3102	Dda3937_01869	ABF-0017434	3197108
3937_g3_3103	Dda3937_01868	ABF-0017433	3198486
3937_g3_3105	Dda3937_01864	ABF-0017425	3200844
3937_g3_3113	Dda3937_01855	ABF-0017410	3212774
3937_g3_3115	Dda3937_01853	ABF-0017408	3215095
3937_g3_3116	Dda3937_01852	ABF-0017407	3215363
3937_g3_3125	Dda3937_01842	ABF-0017394	3228993
3937_g3_3131	Dda3937_01836	ABF-0017388	3237999
3937_g3_3132			3238281
3937_g3_3135			3241470
3937_g3_3136	Dda3937_01833	ABF-0017379	3242438

3937_g3_3137	Dda3937_01832	ABF-0017378	3243078
3937_g3_3141			3248237
3937_g3_3142			3248435
3937_g3_3143			3248713
3937_g3_3148	Dda3937_00987	ABF-0016107	3255279
3937_g3_3153			3258776
3937_g3_3154			3259082
3937_g3_3162			3265910
3937_g3_3167			3271761
3937_g3_3207			3312894
3937_g3_3213	Dda3937_02109	ABF-0017792	3318415
3937_g3_3214	Dda3937_02110	ABF-0017793	3319076
3937_g3_3215	Dda3937_02111	ABF-0017794	3319279
3937_g3_3216	Dda3937_02112	ABF-0017795	3320271
3937_g3_3217	Dda3937_02113	ABF-0017796	3320715
3937_g3_3224	Dda3937_02120	ABF-0017804	3329880
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3937_g3_3248			3351184
3937_g3_3249			3351511
3937_g3_3250	Dda3937_00482	ABF-0015384	3351837
3937_g3_3251			3352016
3937_g3_3260	Dda3937_03037	ABF-0019150	3364412
3937_g3_3270	Dda3937_02183	ABF-0017893	3382779
3937_g3_3272			3385627
3937_g3_3289			3400437
3937_g3_3296	Dda3937_04365	ABF-0046674	3407591
3937_g3_3297	Dda3937_02407	ABF-0018215	3407629
3937_g3_3298	Dda3937_02406	ABF-0018214	3408237
3937_g3_3299			3409582
3937_g3_3300	Dda3937_02404	ABF-0018211	3410059
3937_g3_3301	Dda3937_02403	ABF-0018210	3410635
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3937_g3_3321	Dda3937_00060	ABF-0014588	3430500
3937_g3_3322			3430627
3937_g3_3326	Dda3937_01655	ABF-0017131	3434599
3937_g3_3327	Dda3937_01656	ABF-0017133	3435731
3937_g3_3328	Dda3937_01657	ABF-0017135	3436030
3937_g3_3329	Dda3937_01658	ABF-0017136	3437455
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3937_g3_3398			3514898
3937_g3_3404			3520607
3937_g3_3405			3520889
3937_g3_3408			3522748
3937_g3_3409			3523094
3937_g3_3410			3523531
3937_g3_3411	Dda3937_02805	ABF-0018791	3523530
3937_g3_3412	Dda3937_02804	ABF-0018790	3524175

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3937_g3_3414	Dda3937_02802	ABF-0018788	3525581
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3937_g3_3420			3531063
3937_g3_3421	Dda3937_00008	ABF-0014503	3531784
3937_g3_3422	Dda3937_00007	ABF-0014502	3532292
3937_g3_3423	Dda3937_00006	ABF-0014501	3533156
3937_g3_3424			3533545
3937_g3_3430	Dda3937_03710	ABF-0020152	3540370
3937_g3_3442	Dda3937_03697	ABF-0020134	3553753
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3937_g3_3466			3575455
3937_g3_3468			3576793
3937_g3_3469			3577185
3937_g3_3483			3594676
3937_g3_3500			3611514
3937_g3_3505			3616443
3937_g3_3507			3617550
3937_g3_3519	Dda3937_04456	ABF-0046891	3632949
3937_g3_3521	Dda3937_00502	ABF-0015422	3634863
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3937_g3_3546			3659633
3937_g3_3560			3673418
3937_g3_3569	Dda3937_01565	ABF-0016990	3687584
3937_g3_3572	Dda3937_04296	ABF-0046522	3690051
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3937_g3_3590	Dda3937_03156	ABF-0019327	3704876
3937_g3_3591			3705672
3937_g3_3597	Dda3937_03163	ABF-0019341	3711250
3937_g3_3606	Dda3937_03172	ABF-0019355	3723031
3937_g3_3607			3724721
3937_g3_3612	Dda3937_03176	ABF-0019362	3729294
3937_g3_3634	Dda3937_00955	ABF-0016056	3752823
3937_g3_3635	Dda3937_00954	ABF-0016054	3753642
3937_g3_3637	Dda3937_00952	ABF-0016052	3754651
3937_g3_3638	Dda3937_00950	ABF-0016049	3755522
3937_g3_3639	Dda3937_00949	ABF-0016048	3756805
3937_g3_3640	Dda3937_00948	ABF-0016046	3757294
3937_g3_3641	Dda3937_00947	ABF-0016044	3760343
3937_g3_3642	Dda3937_00946	ABF-0016043	3760536
3937_g3_3643			3760723
3937_g3_3644	Dda3937_00944	ABF-0016041	3761182
3937_g3_3645	Dda3937_00943	ABF-0016040	3761351
3937_g3_3646	Dda3937_00941	ABF-0016038	3762290
3937_g3_3647	Dda3937_00940	ABF-0016037	3762667

3937_g3_3648	Dda3937_00939	ABF-0016035	3763374
3937_g3_3649	Dda3937_00938	ABF-0016034	3764653
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3937_g3_3687	Dda3937_00903	ABF-0015987	3802088
3937_g3_3688	Dda3937_00902	ABF-0015986	3803908
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3937_g3_3710	Dda3937_04390	ABF-0046731	3830782
3937_g3_3729			3847799
3937_g3_3734	Dda3937_00208	ABF-0014879	3852729
3937_g3_3735	Dda3937_00207	ABF-0014878	3855773
3937_g3_3736			3855900
3937_g3_3737	Dda3937_00206	ABF-0014876	3856310
3937_g3_3740			3859001
3937_g3_3760			3887502
3937_g3_3763	Dda3937_00182	ABF-0014839	3890175
3937_g3_3765			3890972
3937_g3_3766			3891186
3937_g3_3782			3912573
3937_g3_3786			3915800
3937_g3_3788			3916937
3937_g3_3791	Dda3937_00047	ABF-0014571	3920195
3937_g3_3797	Dda3937_02618	ABF-0018518	3923489
3937_g3_3799			3924111
3937_g3_3810	Dda3937_02603	ABF-0018499	3936591
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3937_g3_3828			3954729
3937_g3_3835			3963326
3937_g3_3846	Dda3937_04082	ABF-0020681	3973293
3937_g3_3848	Dda3937_03440	ABF-0019758	3974126
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3937_g3_3867	Dda3937_03455	ABF-0019782	3994160
3937_g3_3868	Dda3937_03456	ABF-0019783	3995512
3937_g3_3869	Dda3937_03457	ABF-0019784	3998784
3937_g3_3870	Dda3937_03458	ABF-0019785	3999782
3937_g3_3871	Dda3937_03460	ABF-0019787	4000299
3937_g3_3874	Dda3937_03464	ABF-0019798	4006004
3937_g3_3876	Dda3937_03466	ABF-0019801	4008296
3937_g3_3879	Dda3937_03469	ABF-0019805	4013926
3937_g3_3880			4014134

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3937_g3_3897	Dda3937_03074	ABF-0019200	4037254
3937_g3_3898	Dda3937_03075	ABF-0019201	4038374
3937_g3_3905			4047085
3937_g3_3911			4052114
3937_g3_3915			4055681
3937_g3_3916	Dda3937_03089	ABF-0019228	4055905
3937_g3_3917	Dda3937_03090	ABF-0019229	4057698
3937_g3_3918	Dda3937_03091	ABF-0019230	4058702
3937_g3_3919	Dda3937_04299	ABF-0046526	4060008
3937_g3_3920	Dda3937_02620	ABF-0018521	4061204
3937_g3_3921	Dda3937_02621	ABF-0018522	4062246
3937_g3_3922	Dda3937_02622	ABF-0018523	4062740
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3937_g3_3924	Dda3937_02624	ABF-0018526	4063580
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3937_g3_3940			4083091
3937_g3_3948			4094805
3937_g3_3980			4128833
3937_g3_3983			4130513
3937_g3_4001	Dda3937_01364	ABF-0016693	4152227
3937_g3_4004	Dda3937_01367	ABF-0016697	4154635
3937_g3_4010			4159758
3937_g3_4021	Dda3937_01384	ABF-0016719	4175601
3937_g3_4028			4183614
3937_g3_4030			4184718
3937_g3_4047			4203306
3937_g3_4079			4240025
3937_g3_4100	Dda3937_00440	ABF-0015215	4261819
3937_g3_4111			4274706
3937_g3_4124			4284783
3937_g3_4130			4292938
3937_g3_4131	Dda3937_02183	ABF-0017893	4293002
3937_g3_4134			4296972
3937_g3_4137			4300306
3937_g3_4148	Dda3937_02167	ABF-0017868	4310815
3937_g3_4154			4317197
3937_g3_4155	Dda3937_02160	ABF-0017859	4317436
3937_g3_4161			4322995
3937_g3_4168			4334534
3937_g3_4173	Dda3937_02143	ABF-0017835	4338276
3937_g3_4174			4338959
3937_g3_4192			4364126
3937_g3_4197	Dda3937_01526	ABF-0016933	4370877
3937_g3_4205			4377478
3937_g3_4232			4391113
3937_g3_4252	Dda3937_00533	ABF-0015467	4408858
3937_g3_4253	Dda3937_00534	ABF-0015468	4409262

3937_g3_4256			4411478
3937_g3_4270	Dda3937_00550	ABF-0015488	4424314
3937_g3_4281			4435000
3937_g3_4285			4439068
3937_g3_4287			4440468
3937_g3_4306			4459651
3937_g3_4313	Dda3937_00351	ABF-0015081	4469617
3937_g3_4325			4484166
3937_g3_4326			4484301
3937_g3_4345			4506936
3937_g3_4349			4509317
3937_g3_4359	Dda3937_00311	ABF-0015025	4520476
3937_g3_4362			4523532
3937_g3_4364			4524533
3937_g3_4382			4543501
3937_g3_4388			4547929
3937_g3_4389	Dda3937_00283	ABF-0014991	4548240
3937_g3_4390	Dda3937_00282	ABF-0014990	4549283
3937_g3_4391	Dda3937_00281	ABF-0014989	4550235
3937_g3_4392	Dda3937_00280	ABF-0014987	4551511
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3937_g3_4406			4567039
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3937_g3_4431			4599675
3937_g3_4435			4604819
3937_g3_4436			4608634
3937_g3_4448		ABF-0046529	4621094
3937_g3_4449		ABF-0046530	4621786
3937_g3_4487			4663821
3937_g3_4496			4670113
3937_g3_4512			4684843
3937_g3_4513	Dda3937_04407	ABF-0046768	4685114
3937_g3_4514			4685197
3937_g3_4523			4694726
3937_g3_4530	Dda3937_03232	ABF-0019433	4699204
3937_g3_4531	Dda3937_03231	ABF-0019432	4701579
3937_g3_4533			4702947
3937_g3_4536			4704901
3937_g3_4541	Dda3937_04420	ABF-0046811	4707586
3937_g3_4586			4758707
3937_g3_4588			4760144
3937_g3_4590	Dda3937_00987	ABF-0016107	4762050
3937_g3_4591			4763252
3937_g3_4599			4773586
3937_g3_4601			4774906
3937_g3_4613			4789111
3937_g3_4615			4790505

3937_g3_4619	Dda3937_01012	ABF-0016144	4796008
3937_g3_4625			4801770
3937_g3_4637			4812953
3937_g3_4638			4813274
3937_g3_4640			4814643
3937_g3_4644	Dda3937_01035	ABF-0016187	4819286
3937_g3_4650			4826157
3937_g3_4662			4838741
3937_g3_4663			4839029
3937_g3_4666			4841105
3937_g3_4678			4856425
3937_g3_4687	Dda3937_01073	ABF-0016239	4863478
3937_g3_4695	Dda3937_01082	ABF-0016254	4873496
3937_g3_4696	Dda3937_01083	ABF-0016255	4873853
3937_g3_4697	Dda3937_01084	ABF-0016257	4874543
3937_g3_4698			4874672
3937_g3_4712	Dda3937_01098	ABF-0016279	4888789
3937_g3_4713	Dda3937_01099	ABF-0016280	4889202
3937_g3_4714	Dda3937_01100	ABF-0016281	4890511
3937_g3_4716	Dda3937_01102	ABF-0016284	4896934
3937_g3_4717	Dda3937_01103	ABF-0016285	4898132
3937_g3_4718	Dda3937_01104	ABF-0016286	4899879
3937_g3_4719	Dda3937_01105	ABF-0016287	4900862
3937_g3_4720	Dda3937_01106	ABF-0016288	4902071
3937_g3_4721	Dda3937_00137	ABF-0014775	4903284
3937_g3_4722	Dda3937_00138	ABF-0014776	4904349
3937_g3_4723	Dda3937_00139	ABF-0014777	4904916
3937_g3_4724	Dda3937_00140	ABF-0014778	4905548
3937_g3_4725			4905846
3937_g3_4726			4905984

Stop	Length(AA)	Genomic region	Name
4346	45		
12535	37		
16342	39		
21366	67		
26667	58		
46449	50		
53312	46		
54629	392		
65357	46		
65612	162		
66100	457		<i>dsdA</i>
68576	88		
74717	374		
82450	37		
87655	37		
88792	343		
97509	348		
102095	44		
102375	40		
103965	42		
108065	57		
108159	46		
108663	61		
108865	70		
115562	75		
135530	48		
135723	302		
136767	40		
136931	142		
137428	166		
138234	39		
142815	38		
158331	545		
163530	43		
166169	48		
166251	553		
170328	64		
185220	162	GR 1 (HTI)	
187337	54	GR 1 (HTI)	
188968	430	GR 1 (HTI)	
189354	125	GR 1 (HTI)	
190790	432	GR 1 (HTI)	
191410	196	GR 1 (HTI)	
193073	452	GR 1 (HTI)	
193465	131	GR 1 (HTI)	
196900	40		

197006	58		
207779	61		
230657	647		<i>btuB</i>
231504	41		
235186	39		
243158	394		<i>tufA</i>
257779	47		
282010	39		
283931	47		<i>mobB</i>
284227	42		
292412	39		
295301	69	GR 2 (HTI)	
296621	37	GR 2 (HTI)	
297932	406	GR 2 (HTI)	
298669	245	GR 2 (HTI)	
298984	74	GR 2 (HTI)	
299096	64	GR 2 (HTI)	
299701	73	GR 2 (HTI)	
299909	65	GR 2 (HTI)	
301675	589	GR 2 (HTI)	
302255	59	GR 2 (HTI)	
304177	641	GR 2 (HTI)	
304209	37	GR 2 (HTI)	
307235	950	GR 2 (HTI)	
308916	43		
311641	43		
354735	42		
354874	69		<i>yhcb 2</i>
355162	38		<i>yhcb 1</i>
359797	208		
361043	406		
362960	54		
371812	382		<i>arcB 1</i>
373003	381		<i>arcB 2</i>
381304	47		
401190	44		
406055	216		
428049	563		<i>iaaM</i>
429490	446		<i>iaaH</i>
430799	340		
432999	72		
437913	43		
442369	261	GR 3 (HTI)	
443208	184	GR 3 (HTI)	
451304	57	GR 3 (HTI)	
453219	420	GR 3 (HTI)	
453448	852	GR 3 (HTI)	
455987	379	GR 3 (HTI)	

457436	55	GR 3 (HTI)
457989	46	GR 3 (HTI)
458066	48	GR 3 (HTI)
458469	43	GR 3 (HTI)
459413	262	GR 3 (HTI)
459616	67	GR 3 (HTI)
460152	58	GR 3 (HTI)
462190	681	GR 3 (HTI)
462436	47	GR 3 (HTI)
462414	88	GR 3 (HTI)
462991	53	GR 3 (HTI)
463573	46	GR 3 (HTI)
463565	159	GR 3 (HTI)
464035	83	GR 3 (HTI)
466032	51	
470092	135	
477082	72	
477142	207	
477762	386	
502700	37	
503962	363	
504612	217	
506195	41	
507883	52	
511267	49	
512161	58	
518072	98	
518418	58	
518783	48	
519499	51	
525859	45	
527436	508	
528298	192	
539842	290	
542959	42	
547299	48	
549437	44	
549623	37	
550341	41	
550638	54	
582430	51	
584452	579	
585151	75	
585422	45	
586300	45	
586453	52	
588528	680	
590563	447	

612287	44	
615800	37	
631925	48	
639141	564	
641919	230	
644417	609	
645358	309	
650145	45	
663431	42	
686918	38	
689018	48	
695717	39	
695914	184	
696551	40	
697513	294	
698036	131	
698489	130	
726937	353	GR 4 (HTI)
728009	531	GR 4 (HTI)
729615	154	GR 4 (HTI)
730230	475	GR 4 (HTI)
731960	47	GR 4 (HTI)
734189	88	GR 4 (HTI)
735022	250	GR 4 (HTI)
735117	374	GR 4 (HTI)
743683	41	
743852	58	
744117	38	
744405	84	
756198	41	
769818	384	
780316	55	
794361	47	
797998	38	
798333	37	
808969	41	
814606	432	
816227	50	
817691	152	
829341	329	
835752	51	
835929	75	
837410	38	
837616	359	
839182	128	
839389	273	
840311	428	
851223	87	GR 5 (HTI)

852069	257	GR 5 (HTI)	
858222	1655	GR 5 (HTI)	
858294	412	GR 5 (HTI)	
859691	38	GR 5 (HTI)	
859910	391	GR 5 (HTI)	
862151	169	GR 5 (HTI)	<i>yffY</i>
863057	111	GR 5 (HTI)	
863496	79	GR 5 (HTI)	
863807	102	GR 5 (HTI)	
864589	173	GR 5 (HTI)	
865721	265	GR 5 (HTI)	
866101	98	GR 5 (HTI)	
866940	270	GR 5 (HTI)	
867254	99	GR 5 (HTI)	
869937	646	GR 5 (HTI)	
872130	549	GR 5 (HTI)	
873460	441	GR 5 (HTI)	
875381	646	GR 5 (HTI)	
878521	1011	GR 5 (HTI)	
879647	367	GR 5 (HTI)	
880596	318	GR 5 (HTI)	
881050	669	GR 5 (HTI)	
883049	544	GR 5 (HTI)	
884680	331	GR 5 (HTI)	
886553	41	GR 5 (HTI)	
886774	116	GR 5 (HTI)	
887608	63	GR 5 (HTI)	
887755	112	GR 5 (HTI)	
888538	74	GR 5 (HTI)	
889628	304	GR 5 (HTI)	
889913	86	GR 5 (HTI)	
892086	651	GR 5 (HTI)	
892523	146	GR 5 (HTI)	
893530	317	GR 5 (HTI)	
893874	115	GR 5 (HTI)	
894143	90	GR 5 (HTI)	
896604	816	GR 5 (HTI)	
897335	240	GR 5 (HTI)	
898498	387	GR 5 (HTI)	
899205	236	GR 5 (HTI)	
900098	238	GR 5 (HTI)	
901339	412	GR 5 (HTI)	
901385	103	GR 5 (HTI)	
901693	94	GR 5 (HTI)	
903081	68	GR 5 (HTI)	
906268	81		
906903	108		
915472	52		

915452	352	GR 6 (HTI)
916651	119	GR 6 (HTI)
917000	357	GR 6 (HTI)
918075	260	GR 6 (HTI)
918861	395	GR 6 (HTI)
920394	73	GR 6 (HTI)
920936	169	GR 6 (HTI)
921188	51	GR 6 (HTI)
921530	109	GR 6 (HTI)
922151	107	GR 6 (HTI)
924190	680	GR 6 (HTI)
924557	349	GR 6 (HTI)
925644	46	GR 6 (HTI)
925875	41	GR 6 (HTI)
926239	51	GR 6 (HTI)
926246	106	GR 6 (HTI)
926566	342	GR 6 (HTI)
927591	591	GR 6 (HTI)
930359	278	GR 6 (HTI)
931445	343	GR 6 (HTI)
932150	233	GR 6 (HTI)
932699	150	GR 6 (HTI)
933193	165	GR 6 (HTI)
933894	234	GR 6 (HTI)
935012	371	GR 6 (HTI)
935464	151	GR 6 (HTI)
935778	101	GR 6 (HTI)
936106	113	GR 6 (HTI)
936462	118	GR 6 (HTI)
936598	59	GR 6 (HTI)
936852	85	GR 6 (HTI)
936914	44	GR 6 (HTI)
939004	654	GR 6 (HTI)
939333	109	GR 6 (HTI)
940514	394	GR 6 (HTI)
941139	210	GR 6 (HTI)
942569	473	GR 6 (HTI)
943189	206	GR 6 (HTI)
943911	241	GR 6 (HTI)
944410	175	GR 6 (HTI)
946066	550	GR 6 (HTI)
946435	63	GR 6 (HTI)
946617	168	GR 6 (HTI)
953226	50	
961709	47	
970865	41	
972559	95	
973676	137	

974401	229	
1005115	46	
1009828	116	
1013524	77	
1013830	38	
1015974	50	<i>ydfZ</i>
1024879	207	
1029691	44	
1032287	56	
1036604	55	
1038018	61	
1047105	57	
1047893	39	
1057354	3121	
1071741	40	
1073099	147	GR 7 (HTI)
1073845	39	GR 7 (HTI)
1074582	69	GR 7 (HTI)
1074861	43	GR 7 (HTI)
1076367	380	GR 7 (HTI)
1077102	181	GR 7 (HTI)
1077209	1249	GR 7 (HTI)
1081001	1248	GR 7 (HTI)
1084896	39	GR 7 (HTI)
1085266	37	GR 7 (HTI)
1085868	73	GR 7 (HTI)
1086989	62	GR 7 (HTI)
1087070	419	GR 7 (HTI)
1091756	329	
1094175	343	
1101169	90	
1101713	38	
1108294	53	
1128432	73	<i>ygdI</i>
1141851	45	
1168667	196	
1169415	244	
1170180	144	
1171137	45	
1177761	46	
1178297	44	
1183492	42	
1198582	40	
1206085	87	
1216971	46	
1244036	400	
1254825	40	
1259321	38	

1279215	39		
1294518	54		
1329193	103		
1345424	193		<i>speG</i>
1358643	62		
1375117	39		
1375985	152		
1401866	61		
1404688	429		
1406187	84		
1438502	37		
1448706	38		
1465949	440		
1499134	50		
1503079	726	GR 8	<i>wzc</i>
1504995	459	GR 8	<i>weaP</i>
1505064	39	GR 8	
1506121	303	GR 8	<i>rfbN</i>
1509572	287	GR 8	<i>rfbD</i>
1511010	297	GR 8	<i>rfbF</i>
1512095	334	GR 8	
1513304	257	GR 8	
1515339	523	GR 8	
1516738	423	GR 8	
1517733	332	GR 8	
1529132	44		
1532600	45		
1534571	52		
1534799	39		
1547531	43		
1558920	456	GR 9	
1559699	232	GR 9	
1560463	255	GR 9	
1567955	63	GR 9	
1569566	461	GR 9	
1571092	345	GR 9	
1571450	78	GR 9	
1571534	59	GR 9	
1573440	65	GR 9	
1573752	40	GR 9	
1602600	42		
1606418	501		<i>ousA</i>
1608521	84		
1617449	50		
1626013	42		
1628255	314		
1635336	40		
1636769	284		

1653874	49		
1657775	55		
1660371	59		
1661458	63		
1665543	41		
1669888	53		
1670448	40		
1676201	37		
1676525	85		
1690773	41		
1704934	209		
1707234	493		
1711685	214		
1713650	55		
1713800	188		
1714568	37		
1722733	294		<i>ydbC</i>
1724640	306		<i>ycaN</i>
1728676	299		
1728685	48		
1729223	66		
1730620	97	GR 10 (HTI)	
1730941	341	GR 10 (HTI)	
1731947	213	GR 10 (HTI)	
1732592	292	GR 10 (HTI)	
1733467	582	GR 10 (HTI)	
1735212	220	GR 10 (HTI)	
1735886	753	GR 10 (HTI)	
1756688	104	GR 11 (HTI)	
1758364	107	GR 11 (HTI)	<i>yncA</i>
1760165	365	GR 11 (HTI)	<i>ypdF</i>
1760685	168	GR 11 (HTI)	<i>yhhY</i>
1761260	74	GR 11 (HTI)	
1762770	308	GR 11 (HTI)	<i>ybhD</i>
1764949	364	GR 11 (HTI)	<i>ybhH</i>
1766259	414	GR 11 (HTI)	
1773832	725		
1774254	154		
1779600	329		
1786842	45		
1790299	38		
1793085	41		
1806625	100		
1810881	130		
1815378	43		
1817810	66		
1830575	348		
1831601	48		

1835671	69		
1844100	45		
1847751	49	GR 12	
1847884	284	GR 12	
1850441	467	GR 12	
1851232	249	GR 12	
1852096	282	GR 12	
1853094	318	GR 12	
1853150	363	GR 12	<i>ycjY</i>
1854380	382	GR 12	
1856787	250	GR 12	
1857301	142	GR 12	
1870820	39	GR13 (HTI)	
1873036	135	GR13 (HTI)	
1873226	414	GR13 (HTI)	
1874784	128	GR13 (HTI)	
1875378	305	GR13 (HTI)	<i>ycdJ</i>
1876961	191	GR13 (HTI)	
1877909	150	GR13 (HTI)	
1878449	158	GR13 (HTI)	
1879664	335	GR13 (HTI)	
1879882	241	GR13 (HTI)	
1881490	149	GR13 (HTI)	
1881645	47	GR13 (HTI)	
1881658	156	GR13 (HTI)	<i>cynS</i>
1882758	95	GR13 (HTI)	
1883471	173	GR13 (HTI)	
1883710	41	GR13 (HTI)	
1891829	2662	GR13 (HTI)	
1892221	55	GR13 (HTI)	
1892269	99	GR13 (HTI)	
1892565	94	GR13 (HTI)	
1894280	297	GR13 (HTI)	
1894540	60	GR13 (HTI)	
1895517	219	GR13 (HTI)	<i>tra8 1</i>
1895721	41	GR13 (HTI)	
1897529	431	GR13 (HTI)	
1898768	237	GR13 (HTI)	
1900355	511	GR13 (HTI)	
1900963	172	GR13 (HTI)	
1901087	367	GR13 (HTI)	
1902804	133	GR13 (HTI)	
1903271	81	GR13 (HTI)	
1903506	76	GR13 (HTI)	
1903913	267	GR13 (HTI)	
1904764	94	GR13 (HTI)	
1905443	47	GR13 (HTI)	
1905537	59	GR13 (HTI)	

1908189	115	GR13 (HTI)	
1908186	45	GR13 (HTI)	
1910478	732	GR13 (HTI)	
1922525	52		
1944402	329		
1962784	254		
1963806	320		<i>ytfF</i>
1968997	112		
1974117	43		
1992835	39		
1993631	57		
1994884	39		
1997171	438		
2005331	216		
2005984	216		
2006642	162		
2006887	44		
2007389	125		
2008055	41		
2008573	124		
2013187	422		
2013259	344		
2023220	102	GR 14 (HTI)	
2023704	44	GR 14 (HTI)	
2024329	95	GR 14 (HTI)	
2026561	73	GR 14 (HTI)	<i>arsB 1</i>
2026718	39	GR 14 (HTI)	<i>arsB 2</i>
2030765	183	GR 14 (HTI)	
2030900	52	GR 14 (HTI)	
2031378	307	GR 14 (HTI)	
2032728	43	GR 14 (HTI)	
2035231	257	GR 14 (HTI)	
2036088	42	GR 14 (HTI)	
2036185	55	GR 14 (HTI)	
2036734	71	GR 14 (HTI)	
2036689	173	GR 14 (HTI)	
2037269	564	GR 14 (HTI)	
2038947	62	GR 14 (HTI)	
2039592	898	GR 14 (HTI)	
2042299	209	GR 14 (HTI)	
2042925	72	GR 14 (HTI)	
2043136	37	GR 14 (HTI)	
2043302	62	GR 14 (HTI)	
2043483	65	GR 14 (HTI)	
2044035	265	GR 14 (HTI)	
2044847	100	GR 14 (HTI)	
2045290	62	GR 14 (HTI)	
2045295	70	GR 14 (HTI)	

2046545	386	GR 14 (HTI)	<i>intA</i>
2070251	119		
2070766	118		
2073026	445		
2085829	37		
2086016	40		
2094109	37		
2095705	41		
2099007	38		
2099105	48		
2101727	339		
2103559	152		
2106273	39		
2108617	64		
2128672	46		
2130833	42		
2151874	39		
2177284	69		
2180720	40		
2188667	38		
2190991	123		
2191375	83		
2207709	294		
2208852	347		<i>citC 1</i>
2209175	96		<i>citD 1</i>
2210065	296		<i>citE 1</i>
2211684	509		<i>citF 1</i>
2214325	58		
2214607	83		
2220671	524		<i>ycal 1</i>
2221396	252		<i>ycal 2</i>
2239554	42		
2240521	46		
2245932	50		
2246038	41		
2247887	137		
2248287	186		
2250411	86		
2251245	43		
2251556	49		
2262745	39		
2273791	38		
2288857	138		
2291592	37		
2294216	46		
2295553	246		
2295640	49		
2308188	83		

2338221	39	
2346844	152	
2369099	48	
2369854	68	
2381410	48	
2394019	56	
2394289	313	
2395808	111	
2407043	58	
2411931	122	
2412277	213	
2414660	86	
2416161	320	<i>tehA</i>
2417172	48	
2417940	55	
2430104	43	
2438837	38	
2459227	42	
2462352	40	
2467602	38	
2519835	64	
2522713	51	GR 15 (HTI)
2523063	304	GR 15 (HTI)
2524000	86	GR 15 (HTI)
2524681	41	GR 15 (HTI)
2524878	87	GR 15 (HTI)
2525176	139	GR 15 (HTI)
2525841	85	GR 15 (HTI)
2526044	52	GR 15 (HTI)
2526364	81	GR 15 (HTI)
2526612	4137	GR 15 (HTI)
2543887	38	
2544199	42	
2545167	37	
2550569	303	<i>fadD 2</i>
2551477	253	<i>fadD 1</i>
2567246	47	
2570065	48	
2599377	152	
2601258	41	
2603653	51	
2604024	52	
2619743	38	
2620174	3383	<i>hecA2</i>
2630361	163	
2630902	272	
2633614	39	
2640598	37	

2651015	43	
2661966	41	
2662763	228	
2662951	63	
2662971	159	
2668544	657	
2668843	44	
2681723	38	
2686507	45	
2687960	37	
2693516	109	
2697586	292	
2698473	352	
2700708	261	
2701547	184	
2711040	47	
2734148	43	
2734417	52	
2744760	401	
2749022	146	
2750965	230	
2760974	51	
2762805	108	
2763689	41	
2765995	45	
2766160	37	
2774304	39	
2774550	59	
2781349	194	<i>asr</i>
2781482	37	
2802229	53	
2804174	575	
2816310	43	
2819158	43	
2824633	43	
2831385	54	
2837972	299	
2841759	68	
2842219	169	
2845470	37	
2860101	59	
2863998	52	
2867980	42	
2871339	57	
2876449	356	<i>norM 1</i>
2876751	105	<i>norM 2</i>
2877288	43	GR 16
2877581	46	GR 16

2878044	119	GR 16	<i>sttS</i>
2879009	279	GR 16	
2879166	259	GR 16	<i>pnlH</i>
2880022	40	GR 16	
2880110	120	GR 16	<i>sttM</i>
2880568	347	GR 16	<i>sttL</i>
2881733	306	GR 16	<i>sttK</i>
2882650	181	GR 16	<i>sttJ</i>
2883192	122	GR 16	<i>sttI</i>
2883596	123	GR 16	<i>sttG</i>
2884032	403	GR 16	<i>sttF</i>
2885230	492	GR 16	<i>sttE</i>
2886708	696	GR 16	<i>sttD</i>
2888814	59	GR 16	<i>sttC</i>
2889661	75	GR 16	
2893527	73		
2912443	42		
2916800	40		
2919405	42		
2931080	47		
2938991	37		
2943341	367		<i>ompF</i>
2944980	368		
2945681	46		
2956289	38		
2958917	41		
3017371	71		
3021147	48		
3021387	37		
3022170	64		
3031497	43		
3034195	45		
3042833	712		
3045046	412		
3046557	152		
3075097	140		<i>flhE</i>
3091946	384		
3094066	66		<i>dsrB</i>
3094322	125		
3094783	169		
3097772	57		
3102866	39		
3103918	45		
3104034	37		
3109228	858		
3113602	484		
3114354	200		
3117733	1128		

3118923	397		
3119189	38		
3119498	39		
3130716	54	GR 17 (HTI)	
3130907	166	GR 17 (HTI)	
3131418	1436	GR 17 (HTI)	<i>rhsB</i>
3135740	135	GR 17 (HTI)	
3136161	617	GR 17 (HTI)	<i>vgrG</i>
3139574	81	GR 17 (HTI)	
3140550	84	GR 17 (HTI)	
3140886	82	GR 17 (HTI)	
3146025	626	GR 17 (HTI)	
3152966	46	GR 17 (HTI)	<i>virB7</i>
3155737	402	GR 17 (HTI)	<i>virB10</i>
3157083	52	GR 17 (HTI)	
3157757	65	GR 17 (HTI)	
3161811	412	GR 17 (HTI)	
3161932	288	GR 17 (HTI)	
3163024	218	GR 17 (HTI)	
3165553	59	GR 17 (HTI)	
3165867	78	GR 17 (HTI)	
3166659	64	GR 17 (HTI)	
3167932	45	GR 17 (HTI)	
3168390	49	GR 17 (HTI)	
3169720	438	GR 17 (HTI)	
3174899	1208	GR 17 (HTI)	
3187930	4344	GR 17 (HTI)	
3188381	43	GR 17 (HTI)	
3188754	82	GR 17 (HTI)	
3188751	104	GR 17 (HTI)	
3189584	39	GR 17 (HTI)	
3192738	486	GR 17 (HTI)	
3193010	51	GR 17 (HTI)	
3193582	45	GR 17 (HTI)	
3193712	500	GR 17 (HTI)	
3195352	59	GR 17 (HTI)	
3195860	64	GR 17 (HTI)	
3195996	370	GR 17 (HTI)	
3197101	461	GR 17 (HTI)	
3201029	61	GR 17 (HTI)	
3211662	370		
3214175	306		
3215100	87		
3228784	69		
3237019	326		
3238165	38		
3241354	38		
3241473	321		

3242740	112	
3248371	44	
3248560	41	
3248594	39	
3254290	329	
3259081	101	
3259213	43	
3266077	55	
3271636	41	
3312775	39	
3317024	463	<i>tctE</i>
3318402	224	<i>tctD</i>
3320256	325	
3320699	142	
3322232	505	
3329455	141	
3344536	38	
3351345	53	
3351398	37	
3351598	79	
3351888	42	
3363423	329	
3383798	339	
3385454	57	
3400303	44	
3407286	101	GR 18 (HTI)
3408183	184	GR 18 (HTI)
3409022	261	GR 18 (HTI)
3409358	74	GR 18 (HTI)
3410373	104	GR 18 (HTI)
3410757	40	GR 18 (HTI)
3428613	39	
3430261	79	
3430836	69	
3435621	340	<i>rspB</i>
3435940	69	
3437451	473	<i>ydfJ</i>
3438927	490	<i>ydfI</i>
3496349	48	
3497815	44	
3514767	43	
3520804	65	
3521002	37	
3522873	41	
3522972	40	
3523397	44	
3524168	212	
3524876	233	

3525579	241		
3526249	222		
3526807	46		
3531215	50		
3531341	147		
3532077	71		
3532971	61		
3533402	47		
3540092	92		<i>yfgJ</i>
3552764	329		
3571995	50		
3573389	39		
3575327	42		
3576981	62		
3577063	40		
3594924	82		
3611678	54		
3616327	38		
3617431	39		
3631918	343		
3633466	465		<i>yadQ</i>
3640364	37		
3648515	61		
3659779	48		
3673537	39		
3687378	68		
3689593	152		
3695359	37		
3702386	54		
3705340	154		
3705785	37		
3711747	165		
3724707	558		
3724858	45		
3728602	230		
3752413	136	GR 19 (HTI)	
3753238	134	GR 19 (HTI)	<i>yafO</i>
3754034	205	GR 19 (HTI)	
3756076	184	GR 19 (HTI)	
3756119	228	GR 19 (HTI)	
3756965	109	GR 19 (HTI)	
3757707	878	GR 19 (HTI)	
3760336	66	GR 19 (HTI)	
3760529	64	GR 19 (HTI)	
3760937	81	GR 19 (HTI)	
3761148	67	GR 19 (HTI)	
3761559	243	GR 19 (HTI)	
3762482	61	GR 19 (HTI)	

3762790	194	GR 19 (HTI)	
3763439	404	GR 19 (HTI)	
3801908	43		
3803890	600		
3804624	238		
3804895	38		
3805204	48		
3810611	48		
3826325	39		
3830270	46		
3830267	171	<i>gmhB</i>	
3847930	43		
3854438	569		
3854484	429		
3856031	43		
3857644	444	<i>pehK</i>	
3858888	37		
3887624	40		
3890447	90		
3891115	47		
3891305	39		
3912785	70		
3915654	48		
3916809	42		
3919845	116	<i>yaaX</i>	
3923322	55	<i>priB</i>	
3924260	49		
3937211	206		
3937190	63		
3954887	52		
3963195	43		
3972835	152		
3976033	635		
3985683	60		
3988198	46		
3988296	39		
3990598	63		
3991637	184		
3992198	335		
3993222	312		
3994157	451		
3995509	1091		
3998781	333		
4001138	279		
4007464	486		
4009285	329		
4013348	192	<i>yddH</i>	
4013961	57		

4014882	105	
4038381	375	
4039054	226	
4047213	42	
4052269	51	
4055544	45	GR 20
4055705	66	GR 20
4056445	417	GR 20
4057695	335	GR 20
4058704	434	GR 20
4060026	392	GR 20
4061323	307	GR 20
4062603	45	GR 20
4063281	77	GR 20
4064221	213	GR 20
4074625	552	
4083228	45	
4094626	59	
4128717	38	
4130689	58	
4153078	283	
4154258	125	
4159615	47	
4174531	356	
4183372	80	
4184602	38	
4203554	82	
4239810	71	
4260947	290	
4274593	37	
4284941	52	
4292768	56	
4294021	339	
4296856	38	
4300467	53	
4310669	48	
4317036	53	
4317197	79	
4322864	43	
4334647	37	
4338815	179	<i>b1c</i>
4338825	44	
4364245	39	
4370317	186	<i>yrdD</i>
4377609	43	
4391505	130	
4408562	98	
4409119	47	

4411359	39
4424078	78
4435191	63
4438946	40
4440599	43
4459529	40
4470117	166
4484005	53
4484185	38
4506796	46
4509523	68
4519586	296
4523413	39
4524396	45
4543626	41
4548096	55
4549220	326
4550221	312
4551458	407
4552965	484
4555754	46
4566920	39
4572130	39
4574242	56
4599538	45
4604938	39
4608759	41
4620300	264
4621100	228
4663979	52
4670250	45
4684956	37
4684938	58
4685084	37
4694589	45
4701582	792
4702055	158
4702825	40
4704755	48
4707440	48
4758567	46
4760004	46
4763039	329
4763100	50
4773437	49
4774763	47
4789254	47
4790630	41

ubiD 2

ubiD 1

4795154	284	
4801889	39	
4812804	49	
4813149	41	
4814500	47	
4819720	144	
4826038	39	
4838860	39	
4838898	43	
4840992	37	
4856577	50	
4864455	325	
4872837	219	
4873500	117	
4873872	223	
4874559	37	
4889205	138	GR 21
4890518	438	GR 21
4891947	478	GR 21
4895042	630	GR 21
4896957	391	GR 21
4898179	566	GR 21
4899876	328	GR 21
4900905	388	GR 21
4902076	402	GR 21
4903357	330	GR 21
4904377	179	GR 21
4904922	208	GR 21
4905718	42	GR 21
4905871	37	GR 21

Functional category

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extrachromosomal

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Annotation ASAP

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Transporter, MFS superfamily
hypothetical protein
putative acetyltransferase
D-serine dehydratase (dsdA)
hypothetical exported protein
Maltose/maltodextrin transport ATP-binding protein MalK
hypothetical protein
hypothetical protein
Transposase
Putative cytoplasmic protein
hypothetical protein
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hipa protein
hypothetical protein
Putative DNA-binding protein
Type I restriction-modification system restriction subunit
Type I restriction-modification system methyltransferase subunit
RelB antitoxin
hypothetical protein
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Methyl-accepting chemotaxis protein
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Methyl-accepting chemotaxis protein
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Tail fiber protein
Probable tail fiber assembly protein
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Tail fiber assembly protein
Tail fiber protein
Probable tail fiber assembly protein
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vitamin B12/cobalamin outer membrane transporter (btuB)
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Translation elongation factor Tu (tufA)
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molybdopterin-guanine dinucleotide biosynthesis protein B (mobB)
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Short-chain alcohol dehydrogenase
hypothetical protein
Integrase
hypothetical protein
Putative DNA binding protein
hypothetical protein
hypothetical protein
hypothetical protein
DNA primase
hypothetical protein
Prophage Clp protease-like protein
hypothetical protein
probable tail length tape measure protein
hypothetical protein
hypothetical protein
hypothetical protein
conserved protein (yhcb 2)
conserved protein (yhcb 1)
transcriptional regulator, TetR family
Multidrug resistance transporter, Bcr/CflA family
hypothetical protein
Aerobic respiration control sensor protein arcB (arcB 1)
Aerobic respiration control sensor protein arcB (arcB 2)
hypothetical protein
hypothetical protein
Uncharacterized low-complexity protein
Tryptophan 2-monooxygenase (iaaM)
Indoleacetamide hydrolase (iaaH)
hypothetical protein
hypothetical protein
hypothetical protein
ISEch2 OrfB
ISEch2 OrfA
hypothetical protein
Integrase
Helicase conserved C-terminal domain protein
hypothetical protein

hypothetical protein
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hypothetical protein
putative DNA-binding prophage protein
DNA-binding protein
Putative prophage protein
DNA primase
hypothetical protein
Putative regulator for maltose metabolism
hypothetical protein
hypothetical protein
GCN5-related N-acetyltransferase; Histone acetyltransferase HPA2 and related acetyltransferase
Putative cytoplasmic protein
hypothetical protein
Phenylacetate-coenzyme A ligase
Putative transport protein
hypothetical protein
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hypothetical protein
Conserved domain protein
hypothetical protein
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Putative membrane protein
Putative membrane protein
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Transposase
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GCN5-related N-acetyltransferase; Histone acetyltransferase HPA2 and related acetyltransferase
putative; ORF located using Glimmer/Genemark
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phage abortive infection protein
Retron-type reverse transcriptase

hypothetical protein
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2-isopropylmalate synthase
Transcriptional regulator, AraC family
Putative oxidoreductase
Fumarate reductase flavoprotein subunit
hypothetical protein
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putative glyoxylase resistance protein
hypothetical protein
Transcriptional regulator
Ketosteroid isomerase-related protein
putative antibiotic biosynthesis monooxygenase
hypothetical protein
Glucose-methanol-choline (GMC) oxidoreductase:NAD binding site
hypothetical protein
Phospholipase C 4 precursor
hypothetical protein
ISEch12 OrfA
ISEch12 OrfB
GTP pyrophosphokinase
hypothetical protein
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mandelate racemase/muconate lactonizing enzyme family protein
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hypothetical protein
methyl-accepting chemotaxis protein
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hypothetical protein
ISEch1 transposase
hypothetical protein
hypothetical protein
hypothetical protein
Flavin reductase
Transcriptional regulator, MarR family; Cinnamoyl ester hydrolase
putative short-chain dehydrogenase/reductase
3-oxoacyl-acyl carrier protein synthase II
Transposase

Transposase
FOG: HEAT repeat
Phage integrase
hypothetical protein
Integrase
DNA reGRr protein RadC (yfiY)
hypothetical protein
Putative antitoxin of gyrase inhibiting toxin-antitoxin system
Putative toxin of gyrase inhibiting toxin-antitoxin system
hypothetical protein
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hypothetical protein
Plasmid replication initiator protein
hypothetical protein
VirD2 components relaxase
hypothetical protein
hypothetical protein
Cell division protein FtsK
Cell division protein FtsK
Unknown
bacteriophage protein
Possible ATPase involved in DNA reGRr
Sulphur transferase DndC, putative
hypothetical protein
hypothetical protein
hypothetical protein
putative transposase
transcriptional_regulator,_XRE_family
Putative regulator for maltose metabolism
Transcription regulator
Probable lipoprotein precursor
TRAG protein
hypothetical protein
Conjugative transfer protein TrbB
Conjugative transfer protein TrbC
Conjugative transfer protein TrbD
Conjugative transfer protein TrbE
Conjugative transfer protein TrbJ
Conjugative transfer protein TrbL
Conjugative transfer protein TrbF
Conjugative transfer protein TrbG
Conjugative transfer protein TrbI
Plasmid stabilization system protein
DNA-damage-inducible protein J
hypothetical protein
Transcriptional regulator
putative cytoplasmic protein
hypothetical protein

Phage integrase
unknown phage protein
Acetyltransferase, GNAT family
hypothetical protein
Repressor protein CI
hypothetical protein
Regulatory protein CII
hypothetical protein
hypothetical protein
hypothetical protein
Replication gene A protein
Cell filamentation protein Fic
hypothetical protein
hypothetical protein
hypothetical protein
bacteriophage transcription regulator protein
Probable portal protein
Possible [Haemophilus phage HP1] orf16-like phage protein
Probable capsid scaffolding protein
Probable phage protein
Probable terminase, endonuclease subunit
Probable head completion/stabilization protein
putative_phage_gene
putative_phage_gene
Conserved hypothetical phage protein
hypothetical protein
Holin
hypothetical_phage-related_protein
hypothetical_phage-related_protein
hypothetical protein
putative_phage_gene
hypothetical protein
Phage-related tail protein
hypothetical protein
Putative bacteriophage protein
Hemolysins and related proteins containing CBS domains
Probable tail fiber protein
Tail fiber assembly protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Putative regulator for maltose metabolism
Acetyltransferase

hypothetical protein
hypothetical protein
Fumarate reductase flavoprotein subunit
hypothetical protein
hypothetical protein
putative cytoplasmic protein (ydfZ)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Putative hemagglutinin/hemolysin-related protein
hypothetical protein
2-hydroxy-6-oxo-6-phenylhexa-2,4-dienoate hydrolase
hypothetical protein
Integrase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
transcriptional_regulator,_XRE_family
hypothetical protein
Putative regulator for maltose metabolism
hypothetical protein
Integrase
ISEch1 transposase
Transposase
hypothetical protein
hypothetical protein
hypothetical protein
Putative lipoprotein (ygdI)
hypothetical protein
Nitroreductase
hypothetical protein
Organic hydroperoxide resistance transcriptional regulator
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
L-fucose dehydrogenase
hypothetical protein
hypothetical protein

hypothetical protein
hypothetical protein
Membrane protein mosC
spermidine N1-acetyltransferase (speG)
hypothetical protein
hypothetical protein
Transposase
hypothetical protein
asparagine synthetase B (asnB)
hypothetical protein
hypothetical protein
hypothetical protein
ISEch6 transposase
hypothetical protein
Tyrosine-protein kinase wzc (wzc)
Undecaprenyl-phosphate galactose phosphotransferase (weaP)
hypothetical protein
O antigen biosynthesis rhamnosyltransferase rfbN (rfbN)
dTDP-4-dehydrorhamnose reductase (rfbD)
dTDP-rhamnosyl transferase rfbF
capsular polysaccharide biosynthesis protein
putative glycosyltransferase
Mu-like prophage FluMu defective tail fiber protein
Membrane protein involved in the export of O-antigen, teichoic acid lipoteichoic acids
Glycosyl transferase, group 2 family protein
FIG00614219: hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Phospholipase A1
Ankyrin-like protein
Ankyrin-like protein
hypothetical protein
Putative membrane protein
Putative membrane protein
hypothetical protein; Hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Proline/betaine transporter (ousA)
hypothetical protein
hypothetical protein
hypothetical protein
ISEch3 transposase
hypothetical protein
hypothetical protein

[illegible]

hypothetical protein
hypothetical protein
hypothetical protein
Transcriptional regulator
D-glucarate permease
3-oxoacyl-[acyl-carrier protein] reductase
Transketolase, N-terminal section
Transketolase, C-terminal section
hypothetical protein (ycjY)
NADH-dependent butanol dehydrogenase A
Transcriptional regulator, AraC family
hypothetical protein
hypothetical protein
hypothetical protein
putative pyridoxamine 5'-phosphate oxidase
Glyoxalase family protein
Alpha/beta superfamily hydrolase (ycdJ)
Conserved protein containing a Zn-ribbon-like motif
Transcriptional regulator, TetR family
hypothetical protein
Lipase
Glutamine amidotransferase, class I
Transcriptional regulator, AraC family
hypothetical protein
Cyanate hydratase (cynS)
Conjugative transfer protein TrbF
Conjugative transfer protein TrbI
putative transposase
Nonribosomal peptide synthetase
Conjugative transfer protein TrbI
Plasmid stabilization system protein
DNA-damage-inducible protein J
hypothetical protein
hypothetical protein
ISEch7 transposase (tra8 1)
hypothetical protein
Radical SAM domain heme biosynthesis protein
ISEch11 transposase
transposase, IS3 family
ISEch13 OrfAB
hypothetical protein
DNA-binding protein H-NS
hypothetical protein
MunI regulatory protein
ISEch10 OrfB
ISEch10 OrfA
truncated transposase IS256 family
hcp

putative structure; Structural component (Phage or Prophage Related)
hypothetical protein
Predicted cell-wall-anchored protein SasA (LPXTG motif)
hypothetical protein
ISEch1 transposase
Transcriptional regulator
Integral membrane protein (ytfF)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
ISEch9 transposase
Cytosine permease
Cytosine permease
Small heat shock protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Probable RND efflux membrane fusion protein
hypothetical protein
Transcriptional regulator, MarR family
hypothetical protein
Integral membrane protein
Arsenic efflux pump protein (arsB 1)
Arsenic efflux pump protein (arsB 2)
truncated transposase IS256 family
hypothetical protein
hypothetical protein
hypothetical protein
Transposase
Transposase
Transposase
hypothetical protein
hypothetical protein
Lysozyme
FIG00613275: hypothetical protein
DNA primase traC
hypothetical protein
hypothetical protein
hypothetical protein
Putative prophage protein
Fructokinase (EC 2.7.1.4)
hypothetical protein
hypothetical protein
hypothetical protein
Phage-related protein

Phage integrase (intA)
Translation elongation factor P-related protein
Transcriptional regulator, IclR family
Peptidase M20D, amidohydrolase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Transposase
ISEch5 transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
FIG00613552: hypothetical protein
FIG00613552: hypothetical protein
Fumarylacetoacetate hydrolase family protein
citrate lyase synthetase (citC 1)
citrate lyase, acyl carrier (gamma) subunit (citD 1)
citrate lyase, citryl-ACP lyase (beta) subunit (citE 1)
Citrate lyase alpha chain (citF 1)
hypothetical protein
hypothetical protein
hypothetical protein (ycal 1)
Recombination protein 2 (ycal 2)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Transcriptional regulator
Transcriptional regulator MexT
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Endonuclease
hypothetical protein
hypothetical protein

hypothetical protein
ISEch5 transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Permease of the drug/metabolite transporter (DMT) superfamily
Transcriptional regulator BkdR of isoleucine and valine catabolism operon
hypothetical protein
FOG: TPR repeat protein
hypothetical protein
Transcriptional regulator, LysR family
Tellurite resistance protein tehA (tehA)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Hemolysin
hypothetical protein
hypothetical protein
hypothetical protein
Integrase/recombinase
hypothetical protein
hypothetical protein
hypothetical protein
hemolysin/hemagglutinin-like protein
hypothetical protein
hypothetical protein (nhaB)
hypothetical protein
Long-chain-fatty-acidCoA ligase (fadD 2)
acyl-CoA synthetase, long-chain-fatty-acidCoA ligase (fadD 1)
hypothetical protein
hypothetical protein
ISEch5 transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Putative member of ShlA/HecA/FhaA exoprotein family (hecA2)
hemolysin/hemagglutinin-like protein
hemolysin/hemagglutinin-like protein
hypothetical protein
hypothetical protein

hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Secreted protein Hcp
Methyl-accepting chemotaxis protein
hypothetical protein
hypothetical protein
hypothetical protein
Succinate-semialdehyde dehydrogenase [NADP+] (EC 1.2.1.16)
hypothetical protein
USG protein
Phage-related regulatory protein cII
ISEch2 OrfB
ISEch2 OrfA
hypothetical protein
hypothetical protein
hypothetical protein
Tail fiber protein
alternative bacteriophage tail fiber C-terminus
putative side tail fiber protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Acid shock protein precursor (asr)
hypothetical protein
hypothetical protein
EF hand domain protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Hydrogen peroxide-inducible genes activator
hypothetical protein
putative inner membrane protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Multidrug resistance protein norM (norM 1)
Multidrug resistance protein norM (norM 2)
hypothetical protein
hypothetical protein

second type two secretion system SttS, chaperone
hypothetical protein
pectin lyase
hypothetical protein
second type two secretion system SttM
second type two secretion system SttL
second type two secretion system SttK
second type two secretion system SttJ
second type two secretion system SttI
second type two secretion system SttG
second type two secretion system SttF
second type two secretion system SttE
second type two secretion system SttD
second type two secretion system SttC
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
outer membrane porin 1a (la;b;F) (ompF)
Outer membrane protein F precursor
hypothetical protein
hypothetical protein
hypothetical protein
Putative multicopper oxidases
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Predicted O-linked N-acetylglucosamine transferase, SPINDLY family
Predicted O-linked N-acetylglucosamine transferase, SPINDLY family
ISEch5 transposase
conserved flagellar protein (flhE), unknown function
Hypothetical oxidoreductase yqhD
DsrB protein (dsrB)
Lactoylglutathione lyase and related lyases
Putative inner membrane protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Dimodular nonribosomal peptide synthetase
hypothetical protein
hypothetical protein
hypothetical protein

hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Rhs-family protein
hypothetical protein
Putative Rhs accessory genetic element
transcriptional_regulator,_XRE_family
DNA-binding protein
DNA-binding protein
hypothetical protein
TriF protein (virB7)
Inner membrane protein forms channel for type IV secretion of T-DNA complex (VirB10) (virB10)
hypothetical protein
hypothetical protein
ISEch11 transposase
hypothetical protein
hypothetical protein
TriL protein
Putative antitoxin of gyrase inhibiting toxin-antitoxin system
Transposase
hypothetical protein
hypothetical protein
hypothetical protein
hemagglutinin protein
Predicted cell-wall-anchored protein SasA (LPXTG motif)
hypothetical protein
TriL protein
Putative toxin of gyrase inhibiting toxin-antitoxin system
hypothetical protein
probable membrane protein YPO2297
ATP-dependent helicase
hypothetical protein
hypothetical protein
unknown
hypothetical protein
putative molybdenum cofactor synthesis-step 1 protein isoform 2
Arylsulfatase regulator (Fe-S oxidoreductase)
ISEch8 OrfB
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Probable lipase/esterase
hypothetical protein
hypothetical protein
Conserved domain protein

Similarities with transcriptional regulator
hypothetical protein
hypothetical protein
hypothetical protein
ISEch1 transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Sensor protein (tctE)
Transcriptional regulatory protein tctD (tctD)
transport of tricarboxylates
transport of tricarboxylates
Tricarboxylate transport membrane protein tctA
Organic hydroperoxide resistance protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
ISEch1 transposase
Transposase
hypothetical protein
hypothetical protein
Tail fiber assembly protein
ISEch2 OrfA
ISEch2 OrfB
hypothetical protein
PTS system, cellobiose-specific IIB component
virulence associated protein C
hypothetical protein
hypothetical protein
hypothetical protein
Starvation sensing protein rspB (rspB)
hypothetical protein
Transporter, MFS superfamily (ydfJ)
Putative D-mannonate oxidoreductase (ydfI)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Putative periplasmic binding protein
Glutamine transport system permease protein

amino acid ABC transporter, ATP-binding protein
Cystine transport system permease protein
hypothetical protein
hypothetical protein
Thioredoxin reductase
Putative regulator for maltose metabolism
hypothetical protein
hypothetical protein
hypothetical protein (yfgJ)
ISEch1 transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Transposase
H(+)/Cl(-) exchange transporter clcA (yadQ)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Transposase
hypothetical protein
hypothetical protein
GCN5-related N-acetyltransferase
hypothetical protein
Transcriptional regulatory protein
Dipeptidase-related protein
hypothetical protein
hypothetical protein
hypothetical protein
toxin/antitoxin Yaf system, toxin YafO (yafO)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
DNA primase traC
Putative prophage protein
hypothetical protein
hypothetical protein
putative regulatory protein
hypothetical protein
hypothetical protein

hypothetical protein
Integrase
hypothetical protein
Allophanate hydrolase
Transcriptional regulator, GntR family
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
D,D-heptose 1,7-bisphosphate phosphatase (gmhB)
hypothetical protein
hypothetical protein
Predicted rhamnose oligosaccharide ABC transport system, substrate-binding component
hypothetical protein
Polygalacturonase (pehK)
hypothetical protein
hypothetical protein
Myb domain-containing protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
putative exported protein (yaaX)
primosomal protein N (priB)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
FOG: TPR repeat
hypothetical protein
hypothetical protein
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hypothetical protein
GGDEF domain protein
ISEch1 transposase
NAD(P)H-flavin oxidoreductase (yddH)
hypothetical protein

hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Probable transporter
Putative glutathione synthase
hypothetical protein
Argininosuccinate lyase
Cysteine synthase
Polyribonucleotide nucleotidyltransferase
hypothetical protein
Orotate phosphoribosyltransferase
Methyl-accepting chemotaxis protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Putative phage-related protein(hydrolase)
hypothetical protein
hypothetical protein
Exopolysaccharide production protein exoZ
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Outer membrane lipoprotein blc precursor (blc)
hypothetical protein
hypothetical protein
putative DNA topoisomerase (yrdD)
hypothetical protein
hypothetical protein
putative membrane protein
hypothetical protein

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hypothetical protein
Transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Ethanolamine operon regulatory protein
Protein involved in meta-pathway of phenol degradation
Major facilitator family transporter
Amidase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
3-polyprenyl-4-hydroxybenzoate carboxy-lyase (pseudogene)
3-polyprenyl-4-hydroxybenzoate carboxy-lyase (pseudogene)
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
EF hand domain protein
hypothetical protein
hypothetical protein
hypothetical protein
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hypothetical protein
ISEch1 transposase
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein

Integral membrane protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
PAS/PAC domain
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
hypothetical protein
Regulatory protein, LysR:LysR, substrate-binding
lipoprotein, putative
putative lipoprotein
Probable lipoprotein
hypothetical protein
Predicted SAM-dependent methyltransferases
hypothetical protein
ABC-type cobalamin/Fe³⁺-siderophores transport systems, ATPase components
tetracycline resistance protein tetA(P), putative
Argininosuccinate lyase
High-affinity carbon uptake protein Hat/HatR
serine/threonine kinase
Phosphoribosylglycinamide synthetase ATP-grasp (A) domain protein
Nikkomycin biosynthesis protein, carboxylase
Cysteine synthase
Predicted flavoprotein
GTP cyclohydrolase II
hypothetical protein
hypothetical protein

Conservation in other Dickeyas Conservation in other Dickeyas Conservation
D. zeae 586 D. paradisiaca 703 D. chrysanthemi 1591

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Comment

2 proteins in D. dadantii
2 proteins in D. dadantii

2 proteins in D. dadantii
2 proteins in D. dadantii

2 proteins in *D. dadantii*

2 proteins in *D. dadantii*

2 proteins in *D. solani*

2 proteins in *D. solani*

2 proteins in *D. dadantii*
2 proteins in *D. dadantii*

2 proteins in *D. dadantii*
2 proteins in *D. dadantii*

2 proteins in *D. dadantii*
2 proteins in *D. dadantii*

2 proteins in *D. solani*

2 proteins in *D. dadantii*
2 proteins in *D. dadantii*

2 proteins in *D. dadantii*
2 proteins in *D. dadantii*

2 proteins in *D. solani*

2 proteins in *D. solani*

2 proteins in *D. dadantii*
2 proteins in *D. dadantii*

