

Table S9. ABC transporters in <i>D. deserti</i>						
COG number	Protein annotation	Name	<i>D. radiodurans</i>	<i>D. geothermalis</i>	<i>D. deserti</i>	Spectral count
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	DR_A0210	Dgeo_2510	Deide_2p00290	112
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	DR_1571	Dgeo_1344	Deide_3p01890, Deide_11060	73 596
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	-	-	Deide_1p01230, Deide_3p01130	0 6
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	-	Dgeo_0324	-	
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	-	-	Deide_3p00570, Deide_1p01480, Deide_3p00780, Deide_3p02230	0 167 10 4
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	-	-	Deide_3p00722	0
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	DR_0363, DR_0986	Dgeo_2122, Dgeo_0554	Deide_19110, Deide_06270	683 0
COG0747	ABC-type dipeptide transport system (periplasmic component)	DdpA	DR_1290, DR_A0246, DR_1712, DR_1955		Deide_10250, Deide_3p02270	89 14
COG0601	ABC-type dipeptide transport system (permease component)	DppB	-	-	Deide_1p01490	2
COG0601	ABC-type dipeptide transport system (permease component)	DppB	-	-	Deide_1p01220	0
COG0601	ABC-type dipeptide transport system (permease component)	DppB	DR_A0209	Dgeo_2511	Deide_2p00280	0
COG0601	ABC-type dipeptide transport system (permease component)	DppB	-	Dgeo_0325	-	
COG0601	ABC-type dipeptide transport system (permease component)	DppB	DR_0959	Dgeo_1190	Deide_10240	4

COG0601	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppB	-	-	Deide_3p01120	0
COG0601	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppB	-	-	Deide_3p00790	0
COG0601	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppB	-	-	Deide_3p00580	0
COG0601	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppB	-	-	Deide_3p02240	0
COG0601	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppB	DR_0364	Dgeo_2123	Deide_19120	7
COG0601	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppB	DR_1570	Dgeo_1343	Deide_11070	0
COG1173	ABC-type oligopeptide transport system (permease component)	DppC	DR_A0208	Dgeo_2512	Deide_2p00270	0
COG1173	ABC-type dipeptide transport system (permease component)	DppC	-	Dgeo_0326	-	0
COG1173	ABC-type dipeptide transport system (permease component)	DppC	-	-	Deide_1p01210	0
COG1173	ABC-type dipeptide transport system (permease component)	DppC	-	-	Deide_3p02250	0
COG1173	ABC-type dipeptide transport system (permease component)	DppC	-	-	Deide_1p01500	0
COG1173	ABC-type dipeptide transport system (permease component)	DppC	DR_0958	Dgeo_1191	Deide_10230	2

COG1173	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppC	-	-	Deide_3p01110	0
COG1173	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppC	-	-	Deide_3p00800	0
COG1173	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppC	-	-	Deide_3p00590	0
COG1173	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppC	DR_0365	Dgeo_2124	Deide_19130	0
COG1173	ABC-type dipeptide/oligopeptide/nickel transport system (permease component)	DppC	DR_1569	Dgeo_1342	Deide_11080	2
COG0444	ABC-type dipeptide/oligopeptide/nickel transport system (ATPase component)	DppD	DR_1568	Dgeo_1341	Deide_11090	29
COG0444	ABC-type dipeptide/oligopeptide/Nickel transport system (ATPase component)	DppD	-	-	Deide_3p00600	0
COG4608	ABC-type oligopeptide transport system (ATPase component)	AppF	DR_1567	Dgeo_1340	Deide_11100	41
COG4608	ABC-type oligopeptide transport system (ATPase component)	AppF	-	-	Deide_3p00610	0
COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	-	Dgeo_2032	Deide_04750	0
COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	-	-	Deide_14430	0

COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	-	Dgeo_0801	Deide_14790	0
COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	-	-	Deide_12200	0
COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	DR_0282	Dgeo_2167	Deide_20470	0
COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	DR_1036	Dgeo_1207	Deide_12610	3
COG4177	ABC-type branch-chain amino acid transport system (permease component)	LivM	DR_2120	Dgeo_0733	Deide_07000	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	-	Dgeo_0802	Deide_14800	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	-	Dgeo_2031	Deide_04760	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	-	-	Deide_12210	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	-	-	Deide_14440	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	DR_A0262	Dgeo_2424	Deide_2p00160	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	DR_0281	Dgeo_2166	Deide_20460	0
COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	DR_2121	Dgeo_0734	Deide_07010	0

COG0559	ABC-type short chain or branch-chain amino acid transport system (permease component)	LivH	DR_1037	Dgeo_1206	Deide_12600	1
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	-	-	Deide_12220	60
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	-	-	Deide_14420	32
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	DR_1038 DR_0788	Dgeo_1205 Dgeo_1636 Dgeo_0620	Deide_12590 Deide_14600 Deide_17040	389 0 0
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	-	Dgeo_0806	Deide_14810	19
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	-	Dgeo_2030	Deide_04770	49
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	DR_A0263	Dgeo_2411	Deide_2p00130	25
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	DR_A0260	Dgeo_2426	Deide_2p00140	4
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	DR_0280	Dgeo_2165	Deide_20450	132
COG0683	ABC-type branch-chain amino acid transport system (periplasmic component)	LivK	DR_2122	Dgeo_0735	Deide_07020	18
COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	-	-	Deide_14410	0
COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	DR_1034	Dgeo_1209	Deide_12630	16

COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	-	Dgeo_0799	Deide_14770	0
COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	-	Dgeo_2029	Deide_04780	0
COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	-	-	Deide_12180	0
COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	DR_0284	Dgeo_2169	Deide_20490	0
COG0410	ABC-type branch-chain amino acid transport system (ATPase component)	LivF	DR_2118	Dgeo_0731	Deide_06980	4
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	-	-	Deide_12190	0
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	-	-	Deide_14460	1
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	DR_0283	Dgeo_2168	Deide_20480	1
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	DR_1035	Dgeo_1208	Deide_12620	27
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	-	Dgeo_0800	Deide_14780	0
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	-	Dgeo_2028	Deide_04790	0
COG0411	ABC-type branch-chain amino acid transport system (ATPase component)	LivG	DR_2119	Dgeo_0732	Deide_06990	0

COG4177- COG0411	ABC-type branch-chain amino acid transport system (permease - ATPase component)	LivM-LivG	DR_A0261	Dgeo_2425	Deide_2p00150	0
COG0834	ABC-type amino acid transport system (periplasmic component)	HisJ	DR_2154 DR_2610 DR_B0078 DR_0564	Dgeo_2189 Dgeo_1060 Dgeo_1986	Deide_05450 Deide_07680 Deide_2p01060 Deide_3p00160 Deide_3p00200	3 100 1 10 165
COG0765	ABC-type amino acid transport system permease component)	HisM	DR_2155 DR_1028	Dgeo_1061	Deide_07690	0
COG1126	ABC-type polar amino acid transport system (ATPase component)	GlnQ	DR_1648	Dgeo_1064	Deide_07730	3
COG1174	ABC-type proline/glycine betaine transport system (permease component)	OpuBB	DR_A0138	Dgeo_0171	Deide_00160	0
COG1174	ABC-type proline/glycine betaine transport system (permease component)	OpuBB	DR_A0136	Dgeo_0173	Deide_00180	0
COG1125	ABC-type proline/glycine betaine transport system (ATPase component)	OpuBA	DR_A0137	Dgeo_0172	Deide_00170	0
COG1732	ABC-type glycine betaine/choline transport system (periplasmic component)	OpuBC	DR_A0135	Dgeo_0174	Deide_00190	22
COG1131	ABC-type multidrug transport system (ATPase component)	CcmA	DR_2316	Dgeo_0381	Deide_21040	0
COG1131	ABC-type multidrug transport system (ATPase component)	CcmA	DR_1012	Dgeo_1811	Deide_17730	5
COG1131	ABC-type multidrug transport system (ATPase component)	CcmA	-	-	Deide_08880	0
COG1131	ABC-type multidrug transport system (ATPase component)	CcmA	DR_0406	Dgeo_1242	Deide_08340	0
COG1132	ABC-type multidrug transport system (ATPase & permease components)	MdIB	DR_2051 DR_A0349	Dgeo_0647 Dgeo_1385	Deide_06130	0

COG1132	ABC-type multidrug transport system (ATPase & permease components)	MdlB	DR_2052	Dgeo_0648	Deide_06140	1
COG1132	ABC-type multidrug transport system (ATPase & permease components)	MdlB	DR_0163	-	Deide_00460	0
COG1132	ABC-type multidrug transport system (ATPase & permease components)	MdlB	DR_0096	-	Deide_19830	0
COG1132	ABC-type multidrug transport system (ATPase & permease components)	MdlB	DR_0095	-	Deide_19840	0
COG1175	ABC-type sugar transport system (permease component)	UgpA	DR_1437	Dgeo_0590	Deide_14330 Deide_3p01820	0 0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_1168 Dgeo_2918	Deide_13600 Deide_3p01660	0 0
COG1175	ABC-type sugar transport system (permease component)	UgpA	DR_0562	Dgeo_1501	Deide_09490	0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_0906	Deide_05060	0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_2820	Deide_1p01610 Deide_3p00100	0 0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_2725	Deide_02540	0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_2695 Dgeo_2918	Deide_3p00980 Deide_3p01950	0 0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_2869	Deide_3p02100	0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	Dgeo_2860	Deide_00570	0
COG1175	ABC-type sugar transport system (permease component)	UgpA	-	-	Deide_1p00650	0
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	DR_1438	Dgeo_0591	Deide_14320 Deide_2p01740	564 3

COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_2821	Deide_1p01600 Deide_3p00090 Deide_3p00990	0 15 16
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	-	Deide_3p01810	16
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_2870	Deide_3p02090	55
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_2696	Deide_3p01960	16
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_0905	Deide_05050	1128
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	-	Deide_3p01640	0
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	-	Deide_03790	0
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	-	Deide_1p00660	44
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_2726 Dgeo_2919	Deide_02550	183
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_2859	Deide_00580	3
COG1653	ABC-type sugar transport system (periplasmic component)	UgpB	-	Dgeo_0687	Deide_10270	35
COG0395	ABC-type sugar transport system (permease component)	UgpE	DR_1436	Dgeo_0589	Deide_14340	1
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	-	Deide_1p00640	0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_2694	Deide_3p01940	0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_2917	Deide_3p01650	0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_1169 Dgeo_2724	Deide_13610	0

COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_2818	Deide_1p01620 Deide_3p00110 Deide_3p00970 Deide_3p01830	0 0 0 0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_0907	Deide_05070	0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_2724	Deide_02530	0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_2868	Deide_3p02110	0
COG0395	ABC-type sugar transport system (permease component)	UgpE	-	Dgeo_2861	Deide_00560	0
COG1137	ABC-type unclassified transport system (ATPase component)	HhbG	DR_2134	Dgeo_0587	Deide_03770	0
COG3833	ABC-type sugar transport system (permease component)	MalG	DR_0563	Dgeo_1502	Deide_09480	0
COG2182	ABC-type sugar transport system (periplasmic component)	MalE	DR_0561	-	Deide_09500	249
COG3839	ABC-type sugar transport system (ATPase component)	MalK	DR_2153	Dgeo_1059	Deide_07670	68
COG1129	ABC-type sugar transport system (ATPase component)	MglA	-	Dgeo_2458	Deide_3p01510 / Deide_3p01501	0
COG1129	ABC-type sugar transport system (ATPase component)	MglA	-	-	Deide_3p02590	0
COG1879	ABC-type sugar transport system (periplasmic component)	RbsB	-	Dgeo_2461	Deide_3p01480	37
COG1879	ABC-type sugar transport system (periplasmic component)	RbsB	-	-	Deide_3p02570	55
COG1172	ABC-type sugar transport system (permease component)	AraH	-	Dgeo_2460	Deide_3p01490	0
COG1172	ABC-type sugar transport system (permease component)	AraH	-	Dgeo_2459	Deide_3p01500	0
COG1172	ABC-type sugar transport system (permease component)	AraH	-	-	Deide_3p02580	0
COG1172	ABC-type sugar transport system (permease component)	AraH	-	-	Deide_3p02600	0

COG1119	ABC-type molybdenum transport system (ATPase component) / Photorepair protein PhrA	ModF/PhrA ?	DR_2145	Dgeo_1736	Deide_07260	0
COG4149	ABC-type molybdate transport system (permease component)	ModC	-	-	Deide_2p02120	0
COG0725	ABC-type molybdate transport system (periplasmic component)	ModA	-	-	Deide_2p02121	15
COG1277	ABC-type transport system involved in multi-copper enzyme maturation (permease component)	NosY	DR_2315	Dgeo_0382	Deide_21030	0
COG1464	ABC-type metal ion transport system (periplasmic component)	NlpA	DR_1359 DR_1358	-	Deide_22340	34
COG2011	ABC-type metal ion transport system (permease component)	AbcD	DR_1357	-	Deide_22350	0
COG1135	ABC-type metal ion transport system (ATPase component)	AbcC	DR_1356	-	Deide_22360	0
COG0715- COG4521	ABC-type nitrate/sulfonate/bicarbonate transport system (periplasmic component)	TauA	DR_1277	Dgeo_1411	Deide_13940	23
COG0715- COG4521	ABC-type nitrate/sulfonate/bicarbonate transport system (periplasmic component)	TauA	DR_1655	Dgeo_0543	Deide_16540	9
COG1116	ABC-type nitrate/sulfonate/bicarbonate transport system (ATPase component)	TauB	DR_2198	Dgeo_1413	Deide_13960	1
COG0600	ABC-type nitrate/sulfonate/bicarbonate transport system (permease component)	TauC	DR_2197	Dgeo_1412	Deide_13950	0
COG3842	ABC-type spermidine/putrescine transport system (ATPase component)	PotA	-	-	Deide_19070	0

COG3842	ABC-type spermidine/putrescine transport system (ATPase component)	PotA	DR_0062	Dgeo_1938	Deide_15860	0
COG4143	ABC-type thiamine transport system (periplasmic component)	TbpA	DR_0262	Dgeo_1933	Deide_15830	2
COG???	ABC-type Na ²⁺ efflux pump transport system (ATPase component)	NatA	DR_0927	Dgeo_1675	Deide_15090	4
COG???	ABC-type Na ²⁺ efflux pump transport system (permease component)	NatB	DR_0926	Dgeo_1676	Deide_15080	0
COG0226	ABC-type phosphate transport system (periplasmic component)	PstS	DR_A0157	Dgeo_0649	Deide_2p01880	5
COG0573	ABC-type phosphate transport system (permease component)	PstC	DR_A0158	Dgeo_0650	Deide_2p01890	1
COG0581	ABC-type phosphate transport system (permease component)	PstA	DR_A0159	Dgeo_0651	Deide_2p01900	0
COG1117	ABC-type phosphate transport system (ATPase component)	PstB	DR_A0160	Dgeo_0652	Deide_2p01910	3
COG1136	ABC-type antimicrobial peptide transport system (ATPase component)	SalX	DR_0473	Dgeo_1377	Deide_13270	0
COG1136	ABC-type antimicrobial peptide transport system (ATPase component)	SalX	DR_2192	Dgeo_0967	Deide_10130	0
COG4591	ABC-type lipoprotein transport system (permease component)	LoIE	DR_0474	Dgeo_1376	Deide_13280	0
COG1123	ABC-type transport system (duplicated ATPase component)	?	DR_0957	Dgeo_1374	Deide_08550	15
COG0488	ABC-type transport system (duplicated ATPase component)	Uup	DR_1103	Dgeo_0506	Deide_16130	0
COG0488	ABC-type transport system (duplicated ATPase component)	Uup	DR_1635	Dgeo_0929	Deide_05240	4
COG1079	uncharacterized ABC-type transport system (permease component)	?	-	Dgeo_1691	Deide_07810	1

COG4603	uncharacterized ABC-type transport system (permease component)	?	DR_0250	Dgeo_1690	Deide_07820	0
COG4787	uncharacterized ABC-type transport system (permease component)	?	DR_0203	-	Deide_08010	0
COG3694	uncharacterized ABC-type transport system (permease component)	?	DR_0204	-	Deide_08020	0
COG3694	uncharacterized ABC-type transport system (ATPase component)	?	DR_1583	-	Deide_10090	0
COG3694	uncharacterized ABC-type transport system (ATPase component)	?	DR_0205	-	Deide_08030	0
COG4586	uncharacterized ABC-type transport system (ATPase component)	?	DR_1581	-	Deide_10070	0
COG4587	uncharacterized ABC-type transport system (permease component)	?	DR_1582	-	Deide_10080	0
COG1744	ABC-type uncharacterized transport system (periplasmic component)	Med/BMP	DR_2070	Dgeo_0695 Dgeo_0703	Deide_20440	132