

Supplementary Table 3. RPKM values for genes associated with different cell-cell interactions in DHAB sediment samples.

	Urania Control	Urania Middle Halocline	Discovery Upper Halocline	Discovery Lower Halocline	L'Atalante Lower Halocline
Pili					
Leader peptidase (Prepilin peptidase) (EC 3.4.23.43) / N-methyltransferase (EC 2.1.1.-)	0	346.2989	62.60717	270.929772	0
MSHA pilin protein MshA	0	23.1311	0	0	0
pilin like competence factor	0	0.124607	0	38.9327	0
Type IV pilin PilA	0	0.484357	7.56168	464.249	0
Pili assembly chaperone protein	0	0	0	198.1228	0
Flagella					
Flagellar basal-body rod proteins FigD, FigB, FigC, FigF, FigG	0	372.866615	0	162.949021	0
Flagellar biosynthesis proteins FlhA, FlhB, FliL, FljP, FliR, FliS	0	747.128131	3.64924	2.1461	0
Flagellar hook protein FlgE, FlgK, FlgL, FliD	30.70813	1634.90163	0	153.257231	0.685554
Flagellar hook-basal body complex protein FlIE	0	72.3947	0	0	0
Flagellar hook-length control protein FliK	0	245.5744	0.731819	0	0
Flagellar M-ring protein FliF	0	119.3978	0	0	0
Flagellar motor rotation protein MotA, MotB	0	453.693937	0	220.4746	0
Flagellar motor switch protein FliG, FliM	0	185.437938	0	94.7317	0
Flagellar P-ring protein FljI	0	90.7147	0	6.34485	0
Flagellar protein FljJ (EC 3.2.1.-)	0	19.7872	0	0	0
Flagellar regulatory protein FleQ	5.77379	155.23	0	54.92005	0
Flagellar synthesis regulator FleN	0	0.158436	0	92.9667	0
Flagellin protein FlaA	0	64.4951025	0	98.6241	0
Flagellin protein FlaG	0	0.154249	0	0	0
Flagellum-specific ATP synthase FliI	0	151.007	0	0	0
RNA polymerase sigma factor for flagellar operon	0	24.1972	20.8008	0.140335	0
Sodium-type flagellar protein motY precursor	0	197.2229	0.346819	0	0
Chemotaxis regulator - transmits chemoreceptor signals to flagellar motor component	0	160.19657	0.381666	0.421004	0
Adhesins					
Incl1 plasmid conjugative transfer pilus-tip adhesin protein PilV	0	0	0	8.99268	0
Large exoproteins involved in heme utilization or adhesion	0	144.552038	0	146.9789	0.86135
Adhesin	0	0.115179	0.763333	0	0
Autotransporter adhesin	6.43778	2.761564	5.24192	702.913	0
Fimbrial adhesin	0	0.150924	0	224.5162	4.96166
Secretion					
Predicted secretion system X protein GspE-like	25.788	47.3371	26.7035	4.09109	0.628453
Preprotein translocase subunits	14.93073	613.509759	1030.578298	821.299721	0
Protein export cytoplasm chaperone proteins	0	367.586741	1.870561	786.7578	53.4891
Protein export membrane proteins	57.05482	415.248084	2.683062	615.2749	0
putative general secretion pathway protein	11.6521	6.38676	0	647.5239	0
Putative HlyD family secretion protein	0	0	0	290.757	0
putative IcmG-like type IV secretion system protein	0	0.148366	0	82.5837	0
SEC2 encodes a guanyl-nucleotide exchange factor for Sec4p and is essential for vesicle transp	0	0	2.45441	0	0
SECRETION ACTIVATOR PROTEIN	0	0	0	78.8007	0
Secretion protein HlyD precursor	0	0	0	16.2838	0
similar to Type IV secretory pathway VirB4 components	0	0.673355	0	0	0
T1SS secreted agglutinin RTX	0	325.2605	0	0	0
Toxin secretion ABC transporter ATP-binding protein	0	168.1056	0	0	0
Type I secretion outer membrane protein, TolC precursor	3.73205	336.3785812	0	180.5145	2.12559
Type I secretion system, outer membrane component LapE # AggA	39.4006	1.796962	0.653838	150.086	0
Type II and III secretion system family protein	0	108.143	0	0	0
type II secretion system protein E	0	0	28.1326	25.9404	0
Type II secretory pathway component PulF-like protein	0	0	0	68.9014	0
Type II secretory pathway, ATPase Pule/Tfp pilus assembly pathway, ATPase PilB	5.06912	167.3721	0.190833	166.64314	0
Type II/IV secretion system ATP hydrolase TadA/VirB11/CpaF, TadA subfamily	0	153.4624	0	0	0
Type II/IV secretion system ATPase TadZ/CpaE, associated with Flp pilus assembly	0	0.0902434	0	0.453556	0
Type II/IV secretion system protein TadC, associated with Flp pilus assembly	0	61.4897	0	0	0
Type II/IV secretion system secretin RcpA/CpaC, associated with Flp pilus assembly	0	0	0	32.5083	0
Type IV secretion system protein VirD4	0	305.6175	0	0.635098	0
type IV secretory pathway VirB4 components-like protein	0	87.5727	0	0	0
Type IV secretory pathway, VirB4 components	0	123.8275	0	0	0
Type IV secretory pathway, VirD2 components (relaxase)	0	37.4573	0	0	0
Type IV secretory pathway, VirD4 components	0	114.92775	185.49	0.317081	0.457592
Type VI secretion lipoprotein/VasD	0	0.247744	0	0	0
Vesicle coat complex COPII, subunit SEC24/subunit SFB2	0	107.975	0	0	0

ATPase provides energy for both assembly of type IV secretion complex and secretion of T-DNA/	0	90.5083	0	0	0
cell processes; transport of large molecules; protein, peptide secretion	0	0.0803084	0	92.7661	0
cyclolysin secretion ATP-binding protein	0	0	0	91.2895	0
Exocyst protein Sec3	0	1.87334	0	0	0
FtsK/SpoIIIE family protein, putative EssC component of Type VII secretion system	0	0	0	20.41	0
General secretion pathway protein C, D, E, F, G, I, J, K, L, M, N	2200.07329	2676.305271	609.7310755	2052.009195	1962.853539
Hemolysin activation/secretion protein	0	46.5011	0	0	0
HlyD family secretion protein	3.99242	61.121	4.87272	172.3203	0
Inner membrane protein forms channel for type IV secretion of T-DNA complex, VirB3	0	36.0607	0	0	0
Integral membrane protein EccD2, component of Type VII secretion system ESX-2	0	0	0	16.7914	0
Membrane protein EccE3, component of Type VII secretion system ESX-3	0	0	0	7.15509	0
Phosphatidylinositol transfer protein SEC14 and related proteins	0	3.5097	0	0	0
Glycoproteins					
Mycobacteriophage Barnyard protein gp56	0	247.325121	7.506226	1090.96809	796.47
Head-tail preconnector protein GP5	0	0	0	5.98295	0
Phage FluMu protein gp47	0	0	0	144.1023	0
phage Gp37Gp68	0	0	0	0	727.897
phage P2 small terminase subunit gpM-like protein	0	183.682	0.351402	0.387621	0
Bacteriophage protein GP46	0	0	0	74.6632	0
Glycoprotein gp2	0	0	0	28.7659	0
Gp5 baseplate hub subunit and tail lysozyme	0	0	48.0604	0	0
Polyketide synthesis					
O-Methyltransferase involved in polyketide biosynthesis	9.11322	89.716771	0.573873	106.889	0
Phenolphthiocerol synthesis type-I polyketide synthase PpsB (EC 2.3.1.41)	0	4.77171	0	0	0
Protein involved in biosynthesis of mitomycin antibiotics/polyketide fumonisin	0	49.6768	0	0	0
putative polyketide synthase	0	326.2748	0	0.223042	0
Toxins					
Antitoxin 1	0	0.177738	0	2.82878	0
Death on curing protein, Doc toxin	0	2.40231	8.39666	340.942	0
HigA protein (antitoxin to HigB)	0	92.5956	0	0	0
HigB toxin protein	0	76.4618	0	0	0
Putative insecticidal toxin complex	0	31.3203	0	0	0
RelE-like Cytotoxic translational repressor of toxin-antitoxin stability system	0	5.25759	8.27318	2685.28	0
RTX toxin, putative	4.29185	1218.90867	2.709216	110.965945	0
RTX toxins and related Ca ²⁺ -binding proteins	0	0	0	147.64566	0
Target Of K1 Killer Toxin	0	1.35978	0	0	0
Toxin secretion ABC transporter ATP-binding protein	0	168.1056	0	0	0
YefM protein (antitoxin to YoeB)	0	0	0	208.243	0
YoeB toxin protein	0	0	0	154.345	0.150958
Zeta toxin family protein	0	189.6226	0	0	0
Zona occludens toxin	0	45.0617	0	23.283	0
Antibiotics					
bleomycin resistance protein	0	34.6794	0	0	0
fosmidomycin resistance protein	7.98484	266.997	1.1288	0	0
Fosmidomycin resistance protein	0	0.62825	1.39131	301.96895	0.340534
Fusaric Resistance Protein FusB / FusC /FusE	0	168.908394	16.0359	339.719	0
Methylenomycin A resistance protein	0	0	0	0.14665	0
Polymyxin resistance protein ArnA_FT, UDP-4-amino-4-deoxy-L-arabinose formylase (EC 2.1.2.-)	0	0	0	62.5226	0
Polymyxin resistance protein ArnC, glycosyl transferase (EC 2.4.-.-)	0	85.331137	0	355.5835	0
Polymyxin resistance protein ArnT, undecaprenyl phosphate-alpha-L-Ara4N transferase; Melitt	0	1.166424	0.867047	419.7183	0
Tetracycline efflux protein TetA	0	60.362784	0	177.0605	0.130741
Tetracycline-efflux transporter	0	0	0	149.252	0
Other natural substances					
bacteriocin resistance protein, putative	0	0.334267	0	313.605	0
Acriflavin resistance plasma membrane protein	2.02446	736.823579	3.71801	394.12842	0
Acriflavin resistance protein	0	114.279	0.251635	276.755235	106.918
acriflavine resistance protein A precursor	0	0.293183	0	259.97	0
Ethidium bromide-methyl viologen resistance protein EmrE	5.67205	1.2748	0.794505	448.015	0
Methyl viologen resistance protein smvA	0	0.689754	0	539.139	0
Organic hydroperoxide resistance protein	0	53.114	0	245.195	0
Organic hydroperoxide resistance transcriptional regulator	0	147.941	19.4909	162.116	0
Putative mechanisms to avoid natural substances including antibiotics					
drug resistance transporter, Bcr/CflA family protein	3.68399	26.9848	0	246.879	0
drug resistance transporter, EmrB/QacA family	0	0	0	19.7906	0
Inner membrane component of tripartite multidrug resistance system	0	1685.68757	0.438287	920.939748	0.29092

Membrane fusion component of tripartite multidrug resistance system	6.25027	109.390164	1.04614	1570.83972	7.15413
Multidrug resistance ABC transporter ATP-binding and permease protein	0	24.2579	0	0	0
Multidrug resistance efflux pump	0	0	0.731819	0	0
Multidrug resistance protein A and B	0	150.303171	0	52.7939	0
Multidrug resistance transporter, Bcr/CflA family	0	0.616681	0	417.3887	0.354265
Multidrug resistance-associated protein/mitoxantrone resistance protein, ABC superfamily	0	136.8694	0	0	0
MATE efflux family protein	0	13.765	0	193.7911	0
MFS family multidrug efflux protein in Burkholderiaceae, unknown substrate	0	20.5627	0	0	0
MFS family multidrug efflux protein, similarity to bicyclomycin resistance protein Bcr	34.8265	5.878977	19.0388	361.4108	58.3551
MFS multidrug efflux pump, B subunit	0	0.266157	0	87.8593	0
Multi antimicrobial extrusion protein (Na+)/drug antiporter, MATE family of MDR efflux	0	0.149379	0	296.64704	0
Multidrug efflux membrane fusion protein MexE	0	98.5468	0	0	0
multidrug efflux protein	0	8.96799	0	0	0
Multidrug efflux RND transporter MexD	0	180.8099	0	0	0
Multidrug efflux transporter MexF	0	195.9153	0	0	0
Na+-driven multidrug efflux pump	0	67.15029	0	0	0
Probable aminoglycoside efflux pump	0	63.8073	0	0.121198	0
Probable RND efflux membrane fusion protein	50.2811	273.878262	0	73.8707	0
Probable transcription regulator protein of MDR efflux pump cluster	3.91354	0.557999	0.758666	131.5801	0.165146
Putative DMT superfamily metabolite efflux protein precursor	0	0.888362	0	492.3525	0
putative RND type efflux pump	17.86212	2.085028	1.971719	994.9414	38.037872
RND efflux system, inner membrane transporter CmeB	82.15748	347.02369	29.883372	1904.72918	0.992629
RND efflux system, membrane fusion protein CmeA	40.7266	366.45466	3.87225	355.73068	0
RND efflux system, outer membrane lipoprotein CmeC	71.60321	182.625948	4.544351	1040.61576	0.725642
RND efflux system, outer membrane lipoprotein, NodT family	0	0.176484	0	102.669	0
RND efflux transporter	0	487.182726	23.661666	966.768898	0.926882
RND multidrug efflux transporter; Acriflavin resistance protein	11.78286	243.862985	126.941005	1576.9421	0.529036
RND type efflux pump involved in aminoglycoside resistance	0	0	0	79.6457	0