

## BRAIN MICROBIOTA IN HUNTINGTON'S DISEASE PATIENTS

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**Supplementary Table 1. Age and gender of HD patients.**

PATIENT	GENDER	AGE	G. VONSATTEL
HD1	M	34	0-I
HD2	F	53	II
HD3	M	43	II
HD4	M	55	III
HD5	M	68	III
HD6	F	56	IV
HD7	M	64	IV



**Supplementary Table 3. Fungal species detected by NGS in ST and FC from seven HD patients.**

HD1ST		HD1FC		HD2 ST		HD2 FC		HD3 ST		HD3 FC	
Number of reads:118143		Number of reads:276036		Number of reads:179862		Number of reads:195990		Number of reads:186643		Number of reads:213301	
Sequence joined:88,1%		Sequence joined:96,7%		Sequence joined:95,4%		Sequence joined:95,5%		Sequence joined:98,6%		Sequence joined:97,9%	
unculturedBasidiomycota	24,34	unculturedBasidiomycota	15,82	uncultured Basidiomycota	26,4	uncultured zygomycete	22,3	uncultured Basidiomycota	14,6	Penicillium_aurantiogriseum	36,4
candida deformans	5,9	candida deformans	6,2	candida deformans	7,7	Malassezia_sp_HM_2008	15,3	Davidiella_tassiana	11,4	unculturedBasidiomycota	7,73
Uncultured Helotiales	4,8	Uncultured Helotiales	5,1	Uncultured Helotiales	6,3	candida deformans	6,2	candida deformans	5,1	Xylaria_curta	4,83
Uncultured fungus clone S24T_41	3,9	Uncultured fungus clone S24T_41	4,2	Uncultured fungus clone S24T_41	5,1	Uncultured Helotiales	5,1	Candida_sp,	4,82	candida deformans	3,9
Uncultured fungus clone CMH602	3,2	Xylaria_curta	3,489	Uncultured fungus clone CMH602	4,1	Uncultured fungus clone S24T_41	4,1	Uncultured Helotiales	4,2	Uncultured Helotiales	3,2
Ramularia glennii	1,7	Uncultured fungus clone CMH602	3,3	Candida_sp,	3,57	Uncultured fungus clone CMH602	3,3	Rhodotorula_mucilaginoso	4,1	Davidiella_tassiana	2,69
		Davidiella_tassiana	3,274	Ramularia glennii	2,3	Ramularia glennii	1,8	Pleospora_herbarum	3,57	Uncultured fungus clone S24T_41	2,6
		Rhodotorula_mucilaginoso	3,071	Xylaria_curta	1,4			Uncultured fungus clone S24T_41	3,4	Uncultured fungus clone CMH602	2,1
		Penicillium_aurantiogriseum	2,579					Eremascus_albus	3,33	unculturedsoil_fungus	1,83
		Ramularia glennii	1,8					Trichoderma_sp_CHTAM10	3,08	Rhodotorula_mucilaginoso	1,8
		Malassezia_sp_HM_2008	1,717					Xylaria_curta	2,75	Fusarium_oxysporum	1,32
								Uncultured fungus clone CMH602	2,7	Ramularia glennii	1,1
								Malassezia_sp_HM_2008	2,67		
								Rhizophlyctis_rosea	1,76		
								Ramularia glennii	1,5		
HD4 ST		HD4 FC		HD5 ST		HD5 FC		HD6 ST		HD6 FC	
Number of reads:194196		Number of reads:243144		Number of reads:208378		Number of reads:206556		Number of reads:156245		Number of reads:184219	
Sequence joined:98,3%		Sequence joined:98,4%		Sequence joined:98,4%		Sequence joined:97,9%		Sequence joined:97,3%		Sequence joined:98,3%	
Davidiella_tassiana	14,97	Xylaria_cubensis	9,04	unculturedBasidiomycota	18,5	unculturedendophytic_fungus	42	candida deformans	10,9	unculturedBasidiomycota	25,4

candida deformans	6,2	candida deformans	7,9	Davidiella_tassiana	11,2	Davidiella_tassiana	7,75	Uncultured Helotiales	8,9	Davidiella_tassiana	10,9
unidentified_sp,	5,236	Uncultured Helotiales	6,4	Ustilago_hordei	7,15	Rhizophydiales_sp_PL163L	2,22	Uncultured fungus clone S24T_41	7,3	Tubeufiaceae_sp_MFLUCC10_0115	6,65
Uncultured Helotiales	5,1	Uncultured fungus clone S24T_41	5,2	candida deformans	6,8			Uncultured fungus clone CMH602	5,8	candida deformans	4,9
Uncultured fungus clone S24T_41	4,1	ascomycete_sp_CH_Aa3L	4,959	Uncultured Helotiales	5,6			Ramularia glennii	3,2	Uncultured Helotiales	4,1
Uncultured fungus clone CMH602	3,3	Uncultured fungus clone CMH602	4,2	Uncultured fungus clone S24T_41	4,5					Uncultured fungus clone S24T_41	3,3
ascomycete_sp_IBWF79B_90A	2,552	Ramularia glennii	2,3	Uncultured fungus clone CMH602	3,6					Uncultured fungus clone CMH602	2,7
Cryptococcus_magnus	2,463	unculturedBasidiomycota	1,261	unculturedsoil_fungus	2,81					Cladonia_fimbriata	2,12
Candida_sp,	2,428			Ramularia glennii	1,9					Ramularia glennii	1,5
Malassezia_sp_HM_2008	2,375									Dioszegia_crocea	1,11
unculturedsoil_fungus	2,32										
Xylaria_curta	2,304										
Rhodotorula_mucilaginosa	2,104										
unculturedBasidiomycota	1,877										
Ramularia glennii	1,8										

HD7 ST	HD7 FC		
Number of reads:194617	Number of reads:201712		
Sequence joined:97,7%	Sequence joined:97,5%		
Davidiella_tassiana	69,38	candida deformans	11,2
Rhodotorula_mucilaginosa	26,13	Uncultured Helotiales	9,2
		Uncultured fungus clone S24T_41	7,5
		Uncultured fungus clone CMH602	5,9
		Ramularia glennii	3,3

**Supplementary table 4. Bacterial species IGS.**

Species	Patients
<i>Escherichia coli</i>	HD3(ST);HD4 (FC)
<i>Fusobacterium nucleatum</i>	HD2 (FC)
<i>Cutibacterium acnes</i>	HD2( ST,FC); HD4(FC); HD5(FC); HD6(ST); HD7(ST)
<i>Staphylococcus aureus</i>	HD4(ST)
<i>Streptococcus pneumoniae</i>	HD7(FC)
<i>Streptococcus sp</i>	HD1(ST)
<i>Uncultured bacterium</i>	HD2(ST)

**Supplementary table 5. Bacterial species identified by NGS in FC and ST from HD patients.**

HD1 ST	HD1 FC	HD2 ST	HD2 FC	HD3 ST	HD3 FC						
<i>Cutibacterium acnes</i>	43,59	<i>Acinetobacter schindleri</i>	12,9	<i>Escherichia coli</i>	33	<i>Acinetobacter lwoffii</i>	13	<i>Escherichia coli</i>	24,7	<i>Acinetobacter schindleri</i>	34
<i>Phyllobacterium</i>	19,61	<i>Bacteroides ovatus</i>	12,6	<i>Burkholderia</i>	17,5	<i>Arthrobacter</i>	12	<i>Corynebacterium</i>	11,6	<i>Cutibacterium acnes</i>	15
<i>Burkholderia</i>	8,716	<i>Arthrobacter</i>	11	<i>Rothia mucilaginosa</i>	12,2	<i>Corynebacterium Pseudomonas</i>	12	<i>Sphingomonadales</i>	11,3	<i>Betaproteobacteria</i>	12
<i>Pseudomonas viridiflava</i>	4,517	<i>Acinetobacter lwoffii</i>	9,88	<i>Microbacterium</i>	8,34	<i>pseudoalcaligenes</i>	6,8	<i>Blautia</i>	10,9	<i>Escherichia coli</i>	8,9
<i>Corynebacterium</i>	3,413	<i>Escherichia coli</i>	8,44	<i>Rhizobiales</i>	3,89	<i>Pseudomonas viridiflava</i>	6,8	<i>Anaerococcus</i>	7,95	<i>Moraxella</i>	8,4
<i>Corynebacteriumkroppenstedtii</i>	2,671	RB41	7,92	<i>Phyllobacterium</i>	2,67	<i>Acidobacteria</i>	6,2	<i>Acinetobacter lwoffii</i>	7,73	<i>Corynebacterium kroppenstedtii</i>	6,1
<i>Cutibacterium</i>	2,268	iii1-8	6,03	<i>Burkholderiaceae</i>	2,32	<i>Actinomycetales</i>	4,9	<i>Sphingobium sp</i>	4,24	<i>Enterobacteriaceae</i>	3,4
<i>Burkholderiaceae</i>	1,493	<i>Gemmatimonadetes</i>	4,09	<i>Veillonella dispar</i>	2,04	<i>Cellvibrio</i>	4,7	<i>Sphingobium xenophagum</i>	3,16		
<i>Actinomycetales</i>	1,146	<i>Gillisia</i>	3,86	<i>Ralstonia</i>	1,32	<i>Roseburia</i>	3,3	<i>Xanthomonadaceae</i>	2,55		
<i>Pseudomonas</i>	1,089	<i>Enterobacter cloacae</i>	3,33	<i>Mycobacterium</i>	1,29	<i>Pseudomonas</i>	2,6	<i>Alphaproteobacteria</i>	2,3		
<i>Cutibacterium granulosum</i>	1,082	<i>Rothia mucilaginosa</i>	2,61	<i>Scardovia</i>	1,26	<i>Corynebacterium</i>	2	<i>Acinetobacter schindleri</i>	1,56		
<i>Escherichia coli</i>	1,019	<i>Haemophilus parainfluenzae</i>	2,41	<i>Streptococcus</i>	1,19	<i>Acidobacteria-6</i>	1,9	<i>Sphingobium</i>	1,17		
		<i>Enterobacter</i>	1,63	<i>Salinispora</i>	1,15	<i>Rhodobacter</i>	1,8	<i>Acinetobacter</i>	1,15		
		<i>Klebsiella</i>	1,29	<i>Corynebacterium kroppenstedtii</i>	1,1	<i>Corynebacterium kroppenstedtii</i>	1,5	<i>Phenyllobacterium</i>	1,13		
		<i>Other</i>	1,12			<i>Sphingomonas</i>	1,5	<i>Ralstonia</i>	1,08		
		<i>Acinetobacter;Other</i>	1,09			<i>Fusobacterium</i>	1,4				
		<i>Enterobacteriaceae</i>	1,06			<i>Micrococcaceae</i>	1,1				
						<i>Gammaproteobacteria</i>	1				