Methylocystis bryophila

Strain identifier

BacDive ID:	7219	**DOI:**	10.13145/bacdive7219.20190402.4
Type strain:	yes	**Designation:**	H2s
Culture col. no.:	DSM 21852, VKM B-2545		

Sections

Name and taxonomic classification
Morphology and physiology
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Name and taxonomic classification

Ref.: 15991	**Domain**	Bacteria
Ref.: 15991	**Phylum**	Proteobacteria
Ref.: 15991	**Class**	Alphaproteobacteria
Ref.: 15991	**Order**	Rhizobiales
Ref.: 15991	**Family**	Methylocystaceae
Ref.: 15991	**Genus**	Methylocystis
Ref.: 15991	**Species**	Methylocystis bryophila
Ref.: 15991	**Full Scientific Name**	Methylocystis bryophila Belova et al. 2013
Ref.: 15991	**Designation:**	H2s
Ref.: 15991	**Type strain:**	yes

Prokaryotic Nomenclature Up-to-date (PNU)

Ref.: 20215	**Domain**	Bacteria
Ref.: 20215	**Phylum**	Proteobacteria
Ref.: 20215	**Class**	Alphaproteobacteria
Ref.: 20215	Literature reference	Int. J. Syst. Evol. Microbiol. 56:1
Ref.: 20215	**Family**	Methylocystaceae
Ref.: 20215	**Genus**	Methylocystis
Ref.: 20215	Taxonomical status	gen. nov. (VP)

Methylocystis bryophila

Ref.: 20215	Literature reference	Int. J. Syst. Bacteriol. 43:735*
Ref.: 20215	**Species**	Methylocystis bryophila
Ref.: 20215	Taxonomical status	sp. nov. (VP)
Ref.: 20215	Literature reference	Int. J. Syst. Evol. Microbiol. 63:1096*
Ref.: 20215	**Full Scientific Name**	Methylocystis bryophila Belova et al. 2013

Morphology and physiology

Ref.: 30743	**Gram stain**	negative
Ref.: 30743	**Cell length**	2.6 µm
Ref.: 30743	**Cell width**	1.15 µm
Ref.: 30743	**Cell shape**	coccus-shaped
Ref.: 30743	**Motility**	no

Metabolite utilization

	Chebi ID	Metabolite	Utilization activity	Kind of utilization tested
Ref.: 30743	16449	Alanine	+	carbon source
Ref.: 30743	22653	Asparagine	+	carbon source
Ref.: 30743	18237	Glutamic acid	+	carbon source
Ref.: 30743	26271	Proline	+	carbon source
Ref.: 30743	17822	Serine	+	carbon source

Ref.: 15991	**Oxygen tolerance**	aerobe
Ref.: 30743	**Oxygen tolerance**	aerobe
Ref.: 30743	**Ability of spore formation**	no

Culture and growth conditions

Ref.: 15991	**Culture medium**	METHYLOCYSTIS MEDIUM (DSMZ Medium 1409), 22°C, pH 5.8 - 6.2; aerobic with 10-20% methane in the headspace
Ref.: 15991	**Culture medium growth**	yes
Ref.: 15991	**Culture medium link**	https://www.dsmz.de/microorganisms/medium/pdf/DSMZ_Medium1409.pdf

Temperatures

	Kind of temperature	Temperature
Ref.: 15991	growth	20-25 °C
Ref.: 30743	growth	08-37 °C
Ref.: 30743	optimum	27.5 °C

Ref.: 30743	**Temperature range**	mesophilic

pH

Kind of pH	pH
growth	4.2-7.6
optimum	6.25

Ref.: 30743
Ref.: 30743

Isolation, sampling and environmental information

Ref.: 15991	**Sample type/isolated from**	Sphagnum peat, bank of a bog lake
Ref.: 15991	**Host species**	Sphagnum
Ref.: 15991	**Geographic location (country and/or sea, region)**	north eastern Germany, lake Teufelssee
Ref.: 15991	**Country**	Germany
Ref.: 15991	**Continent**	Europe

Isolation sources categories

Cat1	Cat2	Cat3
#Host	#Plants	#Peat moss

Application and interaction

Ref.: 15991	**Biosafety level**	1 Risk group (German classification)

Molecular biology

Ref.: 15991	**GC-content**	62 mol% thermal denaturation, midpoint method (Tm)
Ref.: 30743	**GC-content**	62 mol%

	Sequence database	Sequence accession description	Sequence accession number	Sequence length(bp)	Associated NCBI tax ID
Ref.: 15991	EMBL Direct submission		FN422004		
Ref.: 15991	EMBL Direct submission		FN422005		
Ref.: 15991	EMBL Direct submission	Methylocystis bryophila partial pmoA2 gene for particulate methane monooxygenase active-site polypeptide, type strain H2sT	HE798546	531	655015

Ref.: 15991	EMBL Direct submission	Methylocystis bryophila partial nifH gene for nitrogenase iron protein, type strain H2sT	HE798545	449	655015
Ref.: 15991	EMBL Direct submission		FN422003		

Strain availability

Ref.: 15991	**Culture collection no.**	DSM 21852, VKM B-2545
Ref.: 15991	**Strain history**	<- S. N. Dedysh, Winogradski Inst. Microbiol., RAS, Moscow, Russia; H2s <- S. E. Belova and S. N. Dedysh

Associated Passport(s) in StrainInfo

Ref.: 20218	885193 - http://www.straininfo.net/strains/885193
Ref.: 20218	885194 - http://www.straininfo.net/strains/885194

References

Ref.: 15991	Leibniz Institut DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH; Curators of the DSMZ; DSM 21852
Ref.: 20215	D.Gleim, M.Kracht, N.Weiss et. al.: Prokaryotic Nomenclature Up-to-date - compilation of all names of Bacteria and Archaea, validly published according to the Bacteriological Code since 1. Jan. 1980, and validly published nomenclatural changes since.
Ref.: 20218	Verslyppe, B., De Smet, W., De Baets, B., De Vos, P., Dawyndt P. StrainInfo introduces electronic passports for microorganisms.. Syst Appl Microbiol. 37: 42-50 2014 (10.1016/j.syapm.2013.11.002, 24321274)
Ref.: 30743	Barberan A, Caceres Velazquez H, Jones S, Fierer N. Hiding in Plain Sight: Mining Bacterial Species Records for Phenotypic Trait Information. mSphere 2: None-None 2017 (10.1128/mSphere.00237-17, None) - ***originally annotated from #27074***
Ref.: 27074	IJSEM 1096 2013 (10.1099/ijs.0.043505-0)

*** These References are textmined**

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