

Supplementary material:

Table 1: Physico-chemical characterization three Methylophilic strain

Organism	Accession number	M.F.	M.W.	p.I.	-R	+R	EC	II	AI	GRAVY
<i>Methylosinus trichosporium</i>	CAI30806.1	C ₉₂₉ H ₁₃₇₅ N ₂₄₉ O ₂₈₁ S ₈	20.78	5.13	28	19	33920	16.74	57.62	-0.812
<i>Hyphomicrobium zavarzinii</i>	CAA69318.1	C ₉₁₃ H ₁₃₅₉ N ₂₅₃ O ₂₇₆ S ₈	20.55	5.78	26	21	55920	22.65	51.73	-0.970
<i>Methylobacterium podarium</i>	AAR88789.1	C ₉₂₄ H ₁₃₉₇ N ₂₅₃ O ₂₈₀ S ₁₂	20.92	5.46	27	21	46410	27.18	56.20	-0.728

Table 2: Secondary Structure Analysis of three Methylophilic strain

Organisms	Accession no.	Alpha Helix	Strand	Random coil
<i>Methylosinus trichosporium</i>	CAI30806.1	00	55	126
<i>Hyphomicrobium zavarzinii</i>	CAA69318.1	00	52	132
<i>Methylobacterium podarium</i>	AAR88789.1	00	57	122

Table 3: 3-D Model Analysis of Methylophilic strain

Name	PMDB Accession No.	C-score	Exp. TM-Score	Exp. RMSD	No. of decoys	Cluster density
<i>Methylosinus trichosporium</i>	PM0077505	1.75	0.96+-0.05	1.8+-1.5	12600	1.2500
<i>Hyphomicrobium zavarzinii</i>	PM0077506	1.75	0.96+-0.05	1.8+-1.5	12600	1.2500
<i>Methylobacterium podarium</i>	PM0077507	1.76	0.96+-0.05	1.8+-1.5	12600	1.2500

Table 4: putative functional site residues of Methylophilic strain

Name	Putative functional site residues
<i>Methylosinus trichosporium</i>	GLY92, ILE93, SER106, ALA107, ASN108, LYS109, VAL114, LYS118, GLN119, VAL120, LEU122.
<i>Hyphomicrobium zavarzinii</i>	ILE94, SER107, ALA108, ASN109, LYS110, ASP113, VAL115, ASN116, PHE118, LYS1219, SER120, VAL121, LEU123
<i>Methylobacterium podarium</i>	ASN91, GLY92, ILE93, SER106, ALA107, ASP108, LYS109, VAL114, PHE117, LYS118, THR119, VAL120, ASP121, LEU122