



Isolation of Methanogens Capable of Utilizing Solid-Phase Carbonate Minerals
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Abstract

Methanogenesis is a microbially mediated process in which reduced carbon and hydrogen are converted to methane (CH₄) and CO₂ and H₂ when the substrate is dissolved in water. Methanogens are found in a wide range of environments, including deep-sea hydrothermal vents, landfills, and the rumen of ruminants. The isolation of methanogens capable of utilizing solid-phase carbonate minerals is a key step in understanding the role of these organisms in the carbon cycle. In this study, we have developed a method for the isolation of methanogens capable of utilizing solid-phase carbonate minerals. This method involves the use of a solid-phase substrate (calcium carbonate) and the separation of methanogenic cultures from non-methanogenic cultures. The isolation of methanogens capable of utilizing solid-phase carbonate minerals is a key step in understanding the role of these organisms in the carbon cycle. In this study, we have developed a method for the isolation of methanogens capable of utilizing solid-phase carbonate minerals. This method involves the use of a solid-phase substrate (calcium carbonate) and the separation of methanogenic cultures from non-methanogenic cultures.

Methods

Results (continued)

Figure 4: The test tubes with liquid culture showed that the cultures were able to utilize solid-phase carbonate minerals. The test tubes with liquid culture showed that the cultures were able to utilize solid-phase carbonate minerals. The test tubes with liquid culture showed that the cultures were able to utilize solid-phase carbonate minerals. The test tubes with liquid culture showed that the cultures were able to utilize solid-phase carbonate minerals.

Culture Number	Strain	CH ₄ Production (mL/g)
1	Control	0.00
2	Control	0.00
3	Control	0.00
4	Control	0.00
5	Control	0.00
6	Control	0.00
7	Control	0.00
8	Control	0.00
9	Control	0.00
10	Control	0.00
11	Control	0.00
12	Control	0.00
13	Control	0.00
14	Control	0.00
15	Control	0.00
16	Control	0.00
17	Control	0.00
18	Control	0.00
19	Control	0.00
20	Control	0.00
21	Control	0.00
22	Control	0.00
23	Control	0.00
24	Control	0.00
25	Control	0.00
26	Control	0.00
27	Control	0.00
28	Control	0.00
29	Control	0.00
30	Control	0.00
31	Control	0.00
32	Control	0.00
33	Control	0.00
34	Control	0.00
35	Control	0.00
36	Control	0.00
37	Control	0.00
38	Control	0.00
39	Control	0.00
40	Control	0.00
41	Control	0.00
42	Control	0.00
43	Control	0.00
44	Control	0.00
45	Control	0.00
46	Control	0.00
47	Control	0.00
48	Control	0.00
49	Control	0.00
50	Control	0.00
51	Control	0.00
52	Control	0.00
53	Control	0.00
54	Control	0.00
55	Control	0.00
56	Control	0.00
57	Control	0.00
58	Control	0.00
59	Control	0.00
60	Control	0.00
61	Control	0.00
62	Control	0.00
63	Control	0.00
64	Control	0.00
65	Control	0.00
66	Control	0.00
67	Control	0.00
68	Control	0.00
69	Control	0.00
70	Control	0.00
71	Control	0.00
72	Control	0.00
73	Control	0.00
74	Control	0.00
75	Control	0.00
76	Control	0.00
77	Control	0.00
78	Control	0.00
79	Control	0.00
80	Control	0.00
81	Control	0.00
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84	Control	0.00
85	Control	0.00
86	Control	0.00
87	Control	0.00
88	Control	0.00
89	Control	0.00
90	Control	0.00
91	Control	0.00
92	Control	0.00
93	Control	0.00
94	Control	0.00
95	Control	0.00
96	Control	0.00
97	Control	0.00
98	Control	0.00
99	Control	0.00
100	Control	0.00

Results



N
 An organization of
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