

Table S1: Rates of biomass production for each of the fluid – atmospheric composition – sulfate replacement combinations addressed in this study (mg biomass / day). All values are obtained from best linear fits to plots of overall biomass as a function of time between $t = 100$ and $t = 1000$ and represent steady state conditions.

		Atmosphere-independent				Modern atmosphere				Ancient atmosphere				Thick ancient atmosphere			
Fimite-sulfate	Fluid	$u = 0$	$u = 1$	$u = 2$	$u = 3$	$u = 0$	$u = 1$	$u = 2$	$u = 3$	$u = 0$	$u = 1$	$u = 2$	$u = 3$	$u = 0$	$u = 1$	$u = 2$	$u = 3$
	1	42	25442	50845	76249	42	25442	50845	76249	42	25442	50845	76249	42	25442	50845	76247
	2	42	25419	50799	76179	42	25419	50838	76180	42	25419	50799	76179	10	25400	50764	76146
	3	39	25440	50842	76244	39	25440	50842	76244	39	25440	50842	76244	39	25440	50842	76244
	4	42	25442	50845	76249	39	25403	50807	76249	42	25442	50845	76247	42	25442	50845	76247
	5	4	2225	4447	6669	4	2225	4447	6669	4	2225	4446	6667	4	2225	4446	6667
	6	38	15665	31274	46932	38	15665	31298	46932	38	15670	31306	46945	38	16778	33521	50266
	7	4	2180	4356	6532	4	2177	4351	6524	4	2176	4348	6520	4	2176	4348	6520
		Atmosphere-independent				Modern atmosphere				Ancient atmosphere				Thick ancient atmosphere			
Sulfate-replacement	Fluid	$u = 0$	$u = 1$	$u = 2$	$u = 3$	$u = 0$	$u = 1$	$u = 2$	$u = 3$	$u = 0$	$u = 1$	$u = 2$	$u = 3$	$u = 0$	$u = 1$	$u = 2$	$u = 3$
	1	42	25442	50845	76249	42	25442	50845	76249	42	25442	50845	76249	42	25442	50845	76247
	2	48	25437	50834	76232	48	25437	50873	76232	48	25437	50831	76227	10	25400	50800	76199
	3	39	25441	50843	76245	39	25441	50843	76245	39	25441	50843	76245	39	25441	50843	76245
	4	42	25442	50845	76249	39	25403	50807	76249	42	25442	50845	76247	42	25442	50845	76247
	5	41	25778	51517	77256	41	25778	51516	77255	41	25783	51526	77269	41	25782	51525	77268
	6	44	25432	50787	76219	44	25432	50826	76219	44	25432	50826	76220	44	25433	50828	76222
	7	41	25510	50982	76454	41	25480	50922	76363	41	25471	50904	76336	39	25472	50905	76338