

TABLE DR1. Early Miocene occurrences of high abundances of biserial planktics.

Site (Hole)	Latitude	Longitude	Present water depth (m)	Size-fraction (μm)	Reference
Atlantic Ocean					
400 (400A)	47°22'N	09°11'W	4399	>63	1
529 (529)	28°55'S	02°46'E	3035	>63	1, 2
548 (548A)	48°54'N	12°09'W	1251	>74	3
563 (563)	33°38'N	43°46'W	3786	>63	1
608 (608)	42°50'N	23°05'W	3534	>63	4, 5
610 (610)	53°13'N	18°53'W	2427	>63	4, 5
667 (667A)	04°34'N	21°54'W	3529	>63	1
1264 (1264A, 1264B)	28°31'S	02°50'E	2505	>63	6
1265 (1265A)	28°50'S	2°38'E	3060	>63	6
Indian Ocean					
237 (237)	07°05'S	58°08'E	1623	>63	7
709 (709C)	03°54'S	60°33'E	3040	>63	7

References: 1 = Smart and Murray (1994), 2 = Smart (1992), 3 = Poag and Low (1985), 4 = Thomas (1986), 5 = Thomas (1987), 6 = Zachos et al. (2004), 7 = Smart and Ramsay (1995).

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TABLE DR2. Oxygen and carbon isotope data (Fig. 4); mbsf = meters below sea floor, mcd = meters composite depth (below sea floor). All isotope data are raw data and have not been corrected for species isotopic disequilibrium.

Sample	mbsf	Species	$\delta^{18}\text{O}$	$\delta^{13}\text{C}$
608-37-4, 38-40 cm	343.78	<i>Streptochilus</i> sp.	0.66	0.65
		<i>Cibicidoides kullenbergi</i>	1.75	1.42
		<i>Globigerinoides quadrilobatus</i>	0.44	2.69
		<i>Globoquadrina venezuelana</i>	0.64	1.71
608-37-5, 38-40 cm	345.28	<i>Streptochilus</i> sp.	0.79	0.74
		<i>Cibicidoides kullenbergi</i>	1.91	1.53
		<i>Globigerinoides quadrilobatus</i>	0.32	2.46
		<i>Globoquadrina venezuelana</i>	0.76	1.41
608-37-6, 38-40 cm	346.78	<i>Streptochilus</i> sp.	0.28	0.32
		<i>Cibicidoides kullenbergi</i>	1.80	1.52
		<i>Globigerinoides quadrilobatus</i>	0.26	2.43
		<i>Globoquadrina venezuelana</i>	0.55	2.45
608-38-1, 38-40 cm	348.88	<i>Streptochilus</i> sp.	0.68	0.31
		<i>Cibicidoides kullenbergi</i>	1.81	1.35
		<i>Globigerinoides quadrilobatus</i>	0.12	2.68
		<i>Globoquadrina venezuelana</i>	0.89	1.65
	mcd			
1264A-20-5, 32-34 cm	211.51	<i>Streptochilus</i> sp.	1.11	1.13
		<i>Cibicidoides</i> sp.	1.91	1.04
		<i>Globigerinoides quadrilobatus</i>	0.75	2.43
		<i>Globoquadrina venezuelana</i>	0.86	1.77
1264B-21-1, 78-80 cm	210.60	<i>Streptochilus</i> sp.	0.91	1.23
		<i>Globigerinoides quadrilobatus</i>	0.47	2.64
1264B-21-2, 78-80 cm	212.10	<i>Streptochilus</i> sp.	0.70	1.04
		<i>Globigerinoides quadrilobatus</i>	0.64	2.32
		<i>Globoquadrina venezuelana</i>	1.01	1.82