

Table 1. Locations and ages of submarine extrusives with bioalteration. Three types of evidence for bioalteration are distinguished: textural (“Text.”), chemical (“Chem.”) and $\delta^{13}\text{C}$ isotopic evidence (“isot.”). Comments include the type or metamorphism (Met.”) and deformation (“Def.”). A key to the numbered references is given at the bottom of the table.

	ODP/DSDP Site/Loc.	Geographic position		Age (Ma)	Bioalteration			Comments		
		Latitude	Longitude		Text.	Chem.	Isot.	Met.	Def.	Ref.
Oceanic crust										
Atlantic	Kn. Rdg. (dredged)	~76°47' N	~7°22' E	<0.05	yes	yes	n.t.	none	none	1
Atlantic	648B	22°55.320' N	44°56.825' W	Quat.	yes	yes	unc.	none	none	2, 3
Atlantic	411	36°45.97' N	33°23.30' W	1	yes	yes	yes	none	none	2, 3
Atlantic	409	62°36.98' N	25°57.17' W	2.3	yes	yes	unc.	none	none	2, 4
Atlantic	410A	45°30.53' N	29°28.56' W	10	yes	yes	unc.	none	none	2, 5
Atlantic	396B	22°59.14' N	43°30.90' W	10	yes	yes	yes	none	none	2, 6
Atlantic	561	34°47' N	39°02' W	19	yes	n.t.	n.t.	none	none	7
Atlantic	559	35°08' N	40°55' W	34	yes	n.t.	n.t.	none	none	7
Atlantic	407	63°56.32' N	30°34.56' W	38	yes	yes	n.t.	none	none	2, 5
Atlantic	417D	25°02.10' N	68°03.44' W	110	yes	yes	n.t.	none	none	5, 6
Atlantic	418A	25°02.10' N	68°03.44' W	110	yes	yes	yes	none	none	8-10
Lau Basin	834B	18°034.52' S	177°51.74' W	4-7	yes	yes	yes	none	none	2
Pacific	482D (EPR)	22°47' N	107°59' W	0.4	yes	n.t.	n.t.	none	none	7
Pacific	1026B (JFR)	47°48' N	127°46' W	3.5	yes	n.t.	n.t.	none	none	7
Pacific	CD-1-6 (seamount)	8°48' N	103°54' W	3.5	yes	n.t.	n.t.	none	none	7
Pacific	1026 (JFP)	47°45.8' N	127°45.6' W	~4	yes	n.t.	n.t.	none	none	11
Pacific	504B (CRR)	1°13.61' N	83°43.81' W	5.9	yes	yes	yes	none	none	12
Pacific	896A (CRR)	1°13.005' N	83°43.39' W	5.9	yes	yes	yes	none	none	13
Pacific	472 (seamount)	23°00' N	113°60' W	15	yes	n.t.	n.t.	none	none	7
Pacific	MR3-3R (M. Rdg.)	40°22' N	127°16' W	17	yes	n.t.	n.t.	none	none	7
Pacific	OJP (dredged)	5°0.6653' S	164°13.98' E	120	yes	yes	yes	none	none	14
Pacific	807 (OJP)	3°36' S	156°37' W	140	yes	n.t.	n.t.	none	none	7
Pacific	801C (Pig. bas.)	18°58.54' N	156°21.59' E	170	yes	yes	n.t.	none	none	15
Indian	AAD(dredged)	48°78' S	127°36' E	0	yes	yes	n.t.	none	none	16
Indian	AAD(dredged)	48°59' S	127°14' E	1	yes	yes	n.t.	none	none	16
Indian	AAD(dredged)	48°02' S	127°29' E	2.5	yes	yes	n.t.	none	none	16
Indian	187	43°45' S	127°45' E	18-19	yes	yes	n.t.	none	none	16
Indian	187	44°0.5' S	134°59.9' E	22	yes	yes	n.t.	none	none	16
Indian	713 (Ch. Rdg.)	4°12' S	73°34' E	45	yes	n.t.	n.t.	none	none	7
Indian	765D (AAP)	15°59' E	117°35' E	145	yes	n.t.	n.t.	none	none	7
Ophiolites										
Troodos	Cyprus (CY-1 d.h.)	35°02' 54" N	33°10' 46" E	92	yes	yes	yes	Ze - PP	none	17
Mirdita	Albania	~41°50' 30" N	~19°45' 30" E	160	yes	yes	yes	Ze - PP	none	18
Stonyford-CR	California	~39°10' N	~122°30' W	160	yes	yes	yes	Ze - PP	none	19
Nicasio-Frc.	California	~38°02' N	~123°18' W	160	yes	n.t.	yes	Ze - PP	none	20
Balange Np.	Corsica	~42°30' N	~9°08' E	Jur.	yes	n.t.	yes	Ze - PP	none	20
SSOC	W. Norway	~61°5' N	~4°42' E	443	unc.	yes	yes	Lw. Gr.	yes	21
Jormua	Finland	~64°20' N	~27°50' E	1953	no	yes	yes	Up. Gr.	yes	22
Greenstone Belts										
Pilbara	Australia	21°13.206' S	119°18.107' E	3350	yes	yes	unc.	PP/Lw.Gr.	none	5
Barberton	South Africa	~26°00' S	~31°00' E	3470	yes	yes	yes	PP/Lw.Gr.	none	23, 24

Abbreviations: For Ophiolites: CR = Coast Range; Frc. = Franciscan; Np. = Nappe. For ODP/DSDP Site/Loc.: Kn. Rdg. = Knipovich Ridge; EPR = East Pacific Rise; JFR = Juan de Fuca Ridge; JRP = Juan de Fuca Plate; CRR = Costa Rica Rift; M. Rdg. = Mendocino Ridge; OJP = Ontong Java Plain; Pig. Bas. = Pigafetta basin; AAP = Argo Abyssal Plateau; AAD = Australian Antarctic Discordance; Ch. Rdg. = Chagos Ridge; d.h. = drill hole. For Age: Quat. = Quaternary; Jur. = Jurassic. For Bioalteration: n.t. = not tested; unc. = uncertain; Text. = textural; Chem. = chemical; Isot. = isotopic. For Comments: Met. = metamorphism; Def. = deformation; Lw.Gr. = lower greenschist facies; U. Gr. = upper greenschist facies; PP/Lw.Gr. = phrenite-pumpellyite/lower greenschist facies. For References (Ref.): 1: Thorseth et al., 2001; 2: Furnes et al., 2001a; 3: Furnes et al., 2002a; 4: Staudigel et al., 2004; 5: H. Furnes, unpublished data; 6: Furnes et al., 2001b; 7: Fisk et al., 1998; 8: J. French, written communication 1998; 9: Staudigel and Furnes, 2004; 10: Furnes et al., 2006; 11: Fisk et al., 2000; 12: Furnes et al., 1999; 13: Torsvik et al., 1998; 14: Banerjee and Muehlenbachs, 2003; 15: Fisk et al., 1999; 16: Thorseth et al., 2003; 17: Furnes et al., 2001c; 18: Furnes and Muehlenbachs, 2003; 19: N. R. Banerjee, unpublished data; 20: K. Muehlenbachs, unpublished data; 21: Furnes et al., 2002b; 22: Furnes et al., 2005; 23: Furnes et al., 2004; 24: Banerjee et al., 2006.

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