

**Table 3: Later heterotypic synonyms removed from the All-Species Living Tree.**

**LTP\_s100**

Later heterotypic synonym

Earlier heterotypic synonym

***Acetivibrio cellulosolvens***

*Acetivibrio cellulolyticus* Patel et al. 1980. See IJSB, 1986, 36, 314-316

***Acinetobacter grimontii***

*Acinetobacter junii* Bouvet and Grimont 1986. See IJSEM, 2008, 58, 937-940

***Actinomadura malachitica***

*Microtetraspora viridis* Nonomura and Ohara 1971 (Approved Lists 1980). See IJSB, 1989, 39, 152-158

***Aeromonas allosaccharophila***

*Aeromonas veronii* Hickman-Brenner et al. 1988. See Syst. Appl. Microbiol., 2005, 28, 604-609

***Aeromonas culicicola***

*Aeromonas veronii* Hickman-Brenner et al. 1988. See IJSEM, 2006, 56, 11

***Aeromonas trota***

*Aeromonas enteropelogenes* Schubert et al. 1991. See IJSEM, 2002, 52, 2331-2333

***Agrobacterium meteori***

*Agrobacterium atlanticum* Rüger and Höfle 1992. See IJSB, 1999, 49, 1-3

***Allomonas enterica***

*Vibrio fluvialis* Lee et al. 1981. See IJSB, 1989, 39, 210-212

***Alteromonas fuliginea***

*Pseudoalteromonas citrea* (Gauthier 1977) Gauthier et al. 1995. See IJSB, 1998, 48, 247-256

***Alteromonas tetraodonis***

*Alteromonas haloplanktis* (ZoBell and Upham 1944) Reichelt and Baumann 1973 (Approved Lists 1980). See IJSB, 1993, 43, 500-503

***Aquaspirillum aquaticum***

*Comamonas terrigena* (ex Hugh 1962) De Vos et al. 1985 emend. Willems et al. 1991. See IJSB, 1991, 41, 427-444

***Aquaspirillum bengal***

*Aquaspirillum serpens* (Müller 1786) Hylemon et al. 1973 (Approved Lists 1980). See IJSB, 1985, 35, 512-517

***Arthrobacter picolinophilus***

*Rhodococcus erythropolis* (Gray and Thornton 1928) Goodfellow and Alderson 1979 (Approved Lists 1980). See IJSB, 1995, 45, 576-577

***Arthrobacter siderocapsulatus***

*Pseudomonas putida* (Trevisan 1889) Migula 1895 (Approved Lists 1980). See IJSEM, 2001, 51, 169-170

***Bacillus axarquiensis***

*Bacillus mojaviensis* Roberts et al. 1994. See IJSEM, 2007, 57, 1663-1667

***Bacillus galactophilus***

*Bacillus agri* (ex Laubach and Rice 1916) Nakamura 1993. See IJSB, 1994, 44, 172-173

***Bacillus malacitensis***

*Bacillus mojaviensis* Roberts et al. 1994. See IJSEM, 2007, 57, 1663-1667

***Bacillus velezensis***

*Bacillus amyloliquefaciens* (ex Fukumoto 1943) Priest et al. 1987. See IJSEM, 2008, 58, 671-675

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<b><i>Bacteroides capillus</i></b>	<i>Bacteroides buccae</i> Holdeman et al. 1982. See IJSB, 1985, 35, 114
<b><i>Bacteroides pentosaceus</i></b>	<i>Bacteroides buccae</i> Holdeman et al. 1982. See IJSB, 1985, 35, 114
<b><i>Bifidobacterium globosum</i></b>	<i>Bifidobacterium pseudolongum</i> . See Syst. Appl. Microbiol., 1992, 15, 380-385
<b><i>Bifidobacterium infantis</i></b>	<i>Bifidobacterium longum</i> Reuter 1963 (Approved Lists 1980). See IJSEM, 2002, 52, 1945-1951
<b><i>Bifidobacterium lactis</i></b>	<i>Bifidobacterium animalis</i> (Mitsuoka 1969) Scardovi and Trovatelli 1974 (Approved Lists 1980). See IJSEM, 2001, 51, 259-261
<b><i>Bifidobacterium suis</i></b>	<i>Bifidobacterium longum</i> Reuter 1963 (Approved Lists 1980). See IJSEM, 2002, 52, 1945-1951
<b><i>Brevibacterium liquefaciens</i></b>	<i>Arthrobacter nicotianae</i> Giovannozzi-Sermanni 1959 (Approved Lists 1980). See IJSEM, 2004, 54, 615-616
<b><i>Burkholderia cocovenenans</i></b>	<i>Burkholderia gladioli</i> (Severini 1913) Yabuuchi et al. 1993. See IJSB, 1999, 49, 37-42
<b><i>Burkholderia vandii</i></b>	<i>Burkholderia plantarii</i> (Azegami et al. 1987) Urakami et al. 1994. See IJSB, 1999, 49, 37-42
<b><i>Caenibacterium thermophilum</i></b>	<i>Schlegelella thermodepolymerans</i> Elbanna et al. 2003 emend. Lütke-Eversloh et al. 2004. See IJSEM, 2004, 54, 1933-1935
<b><i>Campylobacter hyoilei</i></b>	<i>Campylobacter coli</i> (Doyle 1948) Véron and Chatelain 1973 (Approved Lists 1980). See IJSB, 1997, 47, 1055-1060, and See IJSEM, 2002, 52, 2339-2341. See also See IJSEM, 2001, 51, 819-826
<b><i>Carnobacterium piscicola</i></b>	<i>Lactobacillus maltaromicus</i> Miller et al. 1974 (Approved Lists 1980). See IJSEM, 2003, 53, 675-678
<b><i>Caseobacter polymorphus</i></b>	<i>Corynebacterium variabile</i> corrig. (Müller 1961) Collins 1987. See IJSB, 1989, 39, 7-9
<b><i>Caulobacter crescentus</i></b>	<i>Caulobacter vibrioides</i> Henrici and Johnson 1935 (Approved Lists 1980). See IJSB, 1999, 49, 1053-1073
<b><i>Caulobacter halobacteroides</i></b>	<i>Caulobacter maris</i> Poindexter 1964 (Approved Lists 1980). See IJSB, 1999, 49, 1053-1073
<b><i>Chelatobacter heintzii</i></b>	<i>Aminobacter aminovorans</i> (den Dooren de Jong 1926) Urakami et al. 1992. See IJSEM, 2002, 52, 835-839
<b><i>Chryseobacterium arothri</i></b>	<i>Chryseobacterium hominis</i> Vaneechoutte et al. 2007. See IJSEM, 2009, 59, 695-697.
<b><i>Chryseomonas polytricha</i></b>	<i>Chryseomonas luteola</i> (Kodama et al. 1985) Holmes et al. 1987. See IJSB, 1987, 37, 245-250

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<b><i>Clostridium absonum</i></b>	<i>Clostridium sardiniense</i> Prévot 1938 (Approved Lists 1980) emend. Wang et al. 2005. See IJSEM, 2005, 55, 1193-1197
<b><i>Clostridium hastiforme</i></b>	<i>Tissierella praeacuta</i> (Tissier 1908) Collins and Shah 1986. See IJSEM, 2004, 54, 947-949
<b><i>Clostridium lentoputrescens</i></b>	<i>Clostridium cochlearium</i> (Douglas et al. 1919) Bergey et al. 1923 (Approved Lists 1980). See Bergey's Manual of Systematic Bacteriology, first edition, vol. 2, The Williams & Wilkins Co., Baltimore, 1986, pp. 1141-1200
<b><i>Clostridium parapaperfringens</i></b>	<i>Clostridium baratii</i> corrig. (Prévot 1938) Holdeman and Moore 1970 (Approved Lists 1980). See IJSB, 1982, 32, 77-81
<b><i>Clostridium perenne</i></b>	<i>Clostridium baratii</i> corrig. (Prévot 1938) Holdeman and Moore 1970 (Approved Lists 1980). See IJSB, 1982, 32, 77-81
<b><i>Conglomeromonas largomobilis</i> subsp. <i>largomobilis</i></b>	<i>Azospirillum lipoferum</i> (Beijerinck 1925) Tarrand et al. 1979 (Approved Lists 1980). IJSB, 1986, 36, 80-85
<b><i>Corynebacterium mooreparkense</i></b>	<i>Corynebacterium variabile</i> corrig. (Müller 1961) Collins 1987. See IJSEM, 2005, 55, 1129-1131
<b><i>Corynebacterium nigricans</i></b>	<i>Corynebacterium aurimucosum</i> Yassin et al. 2002 emend. Daneshvar et al. 2004. See IJSEM, 2005, 55, 7-8
<b><i>Corynebacterium seminale</i></b>	<i>Corynebacterium glucuronolyticum</i> Funke et al. 1995. See J. Clin. Microbiol., 2000, 38, 4657-4659
<b><i>Dechlorosoma suillum</i></b>	<i>Azospira oryzae</i> Reinhold-Hurek and Hurek 2000. See IJSEM, 2003, 53, 1139-1142.
<b><i>Deinococcus mumbaiensis</i></b>	<i>Deinococcus ficus</i> Lai et al. 2006. See IJSEM, 2009, 59, 365 -366
<b><i>Desulfitobacterium frappieri</i></b>	<i>Desulfitobacterium hafniense</i> Christiansen and Ahring 1996 emend. Niggemyer et al. 2001. See IJSEM, 2005, 55, 1403-1404
<b><i>Ectothiorhodospira marismortui</i></b>	<i>Ectothiorhodospira mobilis</i> Pelsh 1936 (Approved Lists 1980). See IJSEM, 2000, 50, 583-591
<b><i>Ectothiorhodospira vacuolata</i></b>	<i>Ectothiorhodospira shaposhnikovii</i> Cherni et al. 1969 (Approved Lists 1980). See IJSEM, 2000, 50, 583-591
<b><i>Ensifer xinjiangensis</i></b>	<i>Ensifer fredii</i> (Scholla and Elkan 1984) Young 2003. See IJSEM, 2008, 58, 200-214
<b><i>Enterobacter taylorae</i></b>	<i>Enterobacter cancerogenus</i> (Urosevic 1966) Dickey and Zumoff 1988. See IJSB, 1994, 44, 586-587
<b><i>Enterococcus flavescens</i></b>	<i>Enterococcus casseliflavus</i> (ex Vaughan et al. 1979) Collins et al. 1984. See IJSEM, 2006, 56, 413-416
<b><i>Enterococcus porcinus</i></b>	<i>Enterococcus villorum</i> Vancanneyt et al. 2001. See IJSEM, 2003, 53, 1069-1074

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***Enterococcus saccharominimus***

*Enterococcus italicus* Fortina et al. 2004. See IJSEM, 2006, 56, 413-416

***Enterococcus seriolicida***

*Lactococcus garvieae* (Collins et al. 1984) Schleifer et al. 1986. See IJSB, 1996, 46, 664-668

***Erwinia herbicola***

*Enterobacter agglomerans* Ewing and Fife 1972 (Approved Lists 1980). See IJSB, 1988, 38, 77-88

***Erwinia milletiae***

*Enterobacter agglomerans* Ewing and Fife 1972 (Approved Lists 1980). See IJSB, 1988, 38, 77-88

***Erwinia uredovora***

*Erwinia ananatis* corrig. Serrano 1928 (Approved Lists 1980). See IJSB, 1993, 43, 162-173

***Eubacterium tardum***

*Eubacterium minutum* Poco et al. 1996. See IJSB, 1999, 49, 1939-1941

***Falcivibrio grandis***

*Mobiluncus mulieris* Spiegel and Roberts 1984. See IJSEM, 2005, 55, 7-8

***Falcivibrio vaginalis***

*Mobiluncus curtisii* Spiegel and Roberts 1984. See IJSEM, 2005, 55, 7-8

***Flavimonas oryzihabitans***

*Pseudomonas oryzihabitans* Kodama et al. 1985. See IJSB, 1997, 47, 249-251

***Flavobacterium yabuuchiae***

*Sphingobacterium spiritivorum* (Holmes et al. 1982) Yabuuchi et al. 1983. See J. Gen. Appl. Microbiol., 1992, 38, 465-482

***Flexibacter aggregans***

*Flexithrix dorotheae* Lewin 1970 (Approved Lists 1980). See IJSEM, 2007, 57, 1086-1088.

***Francisella piscicida***

*Francisella philomiragia* subsp. *noatunensis* Mikalsen et al. 2007. See IJSEM, 2009, 59, 1559-1560.

***Fusobacterium pseudonecrophorum***

*Fusobacterium varium* (Eggerth and Gagnon 1933) Moore and Holdeman 1969 (Approved Lists 1980). See IJSB, 1993, 43, 819-821

***Gluconobacter asaii***

*Gluconobacter cerinus* (ex Asai 1935) Yamada and Akita 1984. See IJSEM, 2002, 52, 1635-1640

***Gordonia nitida***

*Gordonia alkanivorans* Kummer et al. 1999. See IJSEM, 2005, 55, 695-697

***Haemophilus paraphrophilus***

*Haemophilus aphrophilus* Khairat 1940 (Approved Lists 1980). See IJSEM, 2006, 56, 2135-2146

***Helicobacter nemestrinae***

*Helicobacter pylori* (Marshall et al. 1985) Goodwin et al. 1989. See IJSEM, 2002, 52, 437-439, and See IJSEM, 2004, 54, 291-292

***Janibacter brevis***

*Janibacter terrae* Yoon et al. 2000 emend. Lang et al. 2003. See IJSEM, 2003, 53, 1999-2005

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***Kitasatoa diplospora***

*Kitasatoa purpurea* Matsumae and Hata 1968 (Approved Lists 1980). See IJSB, 1986, 36, 573-576

***Kitasatoa kauaiensis***

*Kitasatoa purpurea* Matsumae and Hata 1968 (Approved Lists 1980). See IJSB, 1986, 36, 573-576

***Kitasatoa nagasakiensis***

*Kitasatoa purpurea* Matsumae and Hata 1968 (Approved Lists 1980). See IJSB, 1986, 36, 573-576

***Klebsiella trevisanii***

*Klebsiella planticola* Bagley et al. 1982. See IJSB, 1986, 36, 486-488

***Kluyvera cochleae***

*Kluyvera intermedia* (Izard et al. 1980) Pavan et al. 2005. See IJSEM, 2005, 55, 437-442

***Koserella trabulsii***

*Yokenella regensburgei* Kosako et al. 1985. See IJSB, 1991, 41, 171.

***Lactobacillus arizonensis***

*Lactobacillus plantarum* (Orla-Jensen 1919) Bergey et al. 1923 (Approved Lists 1980). See IJSEM, 2005, 55, 2485-2489

***Lactobacillus bavaricus***

*Lactobacillus sakei* corrig. Katagiri et al. 1934 (Approved Lists 1980). See IJSB, 1995, 45, 398-399

***Lactobacillus carnis***

*Lactobacillus piscicola* Hiu et al. 1984. See IJSB, 1987, 37, 310-316

***Lactobacillus cellobiosus***

*Lactobacillus fermentum* Beijerinck 1901 (Approved Lists 1980). See IJSEM, 2004, 54, 809-812

***Lactobacillus curvatus* subsp. *melibiosus***

*Lactobacillus sakei* subsp. *carnosus* corrig. Torriani et al. 1996. See IJSEM, 2004, 54, 1621-1626

***Lactobacillus cypricasei***

*Lactobacillus acidipiscis* Tanasupawat et al. 2000. See IJSEM, 2006, 56, 1681-1683

***Lactobacillus durianis***

*Lactobacillus vaccinoferus* Kozaki and Okada 1983. See IJSEM, 2006, 56, 1721-1724

***Lactobacillus ferintoshensis***

*Lactobacillus parabuchneri* Farrow et al. 1989. See IJSEM, 2005, 55, 2195-2198

***Lactobacillus heterohiochii***

*Lactobacillus fructivorans* Charlton et al. 1934 (Approved Lists 1980). See Syst. Appl. Microbiol., 1983, 4, 507-511

***Lactobacillus sobrius***

*Lactobacillus amylovorus* Nakamura 1981. See IJSEM, 2008, 58, 910-913

***Lactobacillus suntoryeus***

*Lactobacillus helveticus* (Orla-Jensen 1919) Bergey et al. 1925 (Approved Lists 1980). See IJSEM, 2006, 56, 355-360

***Lactobacillus thermotolerans***

*Lactobacillus ingluviei* Baele et al. 2003. See IJSEM, 2006, 56, 793-795

***Lactobacillus trichodes***

*Lactobacillus fructivorans* Charlton et al. 1934 (Approved Lists 1980). See Syst. Appl. Microbiol., 1983, 4, 507-511

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<b><i>Lactobacillus yamanashiensis</i></b>	<i>Lactobacillus mali</i> Carr and Davies 1970 (Approved Lists 1980) emend. Kaneuchi et al. 1988. IJSB, 1988, 38, 269-272
<b><i>Lactobacillus yamanashiensis</i> subsp. <i>mali</i></b>	<i>Lactobacillus mali</i> Carr and Davies 1970 (Approved Lists 1980) emend. Kaneuchi et al. 1988. IJSB, 1988, 38, 269-272
<b><i>Lactobacillus yamanashiensis</i> subsp. <i>yamanashiensis</i></b>	<i>Lactobacillus mali</i> Carr and Davies 1970 (Approved Lists 1980) emend. Kaneuchi et al. 1988. IJSB, 1988, 38, 269-272
<b><i>Leuconostoc amelibiosum</i></b>	<i>Leuconostoc citreum</i> Farrow et al. 1989. See IJSB, 1992, 42, 649-651
<b><i>Leuconostoc argentinum</i></b>	<i>Leuconostoc lactis</i> Garvie 1960 (Approved Lists 1980). See Int. See IJSEM., 2006, 56, 213-216
<b><i>Levinea malonatica</i></b>	<i>Citrobacter koseri</i> Frederiksen 1970 (Approved Lists 1980). See IJSB, 1993, 43, 645-658
<b><i>Listeria murrayi</i></b>	<i>Listeria grayi</i> Errebo Larsen and Seeliger 1966 (Approved Lists 1980). See IJSB, 1992, 42, 171-174
<b><i>Marinilabilia agarovorans</i></b>	<i>Marinilabilia salmonicolor</i> (Veldkamp 1961) Nakagawa and Yamasato 1996. See IJSB, 1999, 49, 1551-1557
<b><i>Marinobacter aquaeolei</i></b>	<i>Marinobacter hydrocarbonoclasticus</i> Gauthier et al. 1992. See IJSEM, 2005, 55, 1349-1351
<b><i>Methanobacterium thermalcaliphilum</i></b>	<i>Methanobacterium thermautotrophicum</i> corrig. Zeikus and Wolfe 1972 (Approved Lists 1980). See IJSB, 1993, 43, 591-596
<b><i>Methanobacterium thermoformicum</i></b>	<i>Methanobacterium thermautotrophicum</i> corrig. Zeikus and Wolfe 1972 (Approved Lists 1980). See IJSB, 1992, 42, 408-411
<b><i>Methanococcus deltae</i></b>	<i>Methanococcus maripaludis</i> Jones et al. 1984. See IJSB, 1996, 46, 727-735
<b><i>Methanocorpusculum aggregans</i></b>	<i>Methanocorpusculum parvum</i> Zellner et al. 1988. See Bergey's Manual of Systematic Bacteriology, second edition, vol. 1 (The Archaea and the deeply branching and phototrophic Bacteria), Springer-Verlag, New York, 2001, pp. 262-264
<b><i>Methanoculleus oldenburgensis</i></b>	<i>Methanoculleus bourgensis</i> corrig. (Ollivier et al. 1986) Maestrojuán et al. 1990. See See IJSEM, 2003, 53, 1551-1552
<b><i>Methanoculleus olentangyi</i></b>	<i>Methanoculleus bourgensis</i> corrig. (Ollivier et al. 1986) Maestrojuán et al. 1990. See See IJSEM, 2003, 53, 1551-1552
<b><i>Methanogenium frittonii</i></b>	<i>Methanoculleus thermophilus</i> corrig. (Rivard and Smith 1982) Maestrojuán et al. 1990. See IJSEM, 2005, 55, 1097-1099
<b><i>Methanosarcina frisia</i></b>	<i>Methanosarcina mazei</i> (Barker 1936) Mah and Kuhn 1984. See IJSB, 1992, 42, 561-567
<b><i>Methanotherix concilii</i></b>	<i>Methanotherix soehngeni</i> Huser et al. 1983. See IJSB, 1988, 38, 30-36

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<b><i>Methylobacterium chloromethanicum</i></b>	<i>Methylobacterium extorquens</i> (Urakami and Komagata 1984) Bousfield and Green 1985. See IJSEM, 2006, 56, 1463
<b><i>Methylobacterium dichloromethanicum</i></b>	<i>Methylobacterium extorquens</i> (Urakami and Komagata 1984) Bousfield and Green 1985. See IJSEM, 2006, 56, 1463
<b><i>Methylobacterium lusitanum</i></b>	<i>Methylobacterium rhodesianum</i> Green et al. 1988. See IJSEM, 2006, 56, 1463
<b><i>Microbispora amethystogenes</i></b>	<i>Microbispora rosea</i> subsp. <i>rosea</i> Nonomura and Ohara 1957 (Approved Lists 1980). See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora chromogenes</i></b>	<i>Microbispora rosea</i> subsp. <i>rosea</i> Nonomura and Ohara 1957 (Approved Lists 1980). See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora diastatica</i></b>	<i>Microbispora rosea</i> subsp. <i>rosea</i> Nonomura and Ohara 1957 (Approved Lists 1980). See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora indica</i></b>	<i>Microbispora rosea</i> subsp. <i>rosea</i> Nonomura and Ohara 1957 (Approved Lists 1980). See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora karnatakensis</i></b>	<i>Microbispora rosea</i> subsp. <i>rosea</i> Nonomura and Ohara 1957 (Approved Lists 1980). See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora parva</i></b>	<i>Microbispora rosea</i> subsp. <i>rosea</i> Nonomura and Ohara 1957 (Approved Lists 1980). See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora thermodiastatica</i></b>	<i>Microbispora rosea</i> subsp. <i>aerata</i> (Gerber and Lechevalier 1964) Miyadoh et al. 1991. See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Microbispora thermorosea</i></b>	<i>Microbispora rosea</i> subsp. <i>aerata</i> (Gerber and Lechevalier 1964) Miyadoh et al. 1991. See J. Gen. Microbiol. 1990, 136, 1905-1913
<b><i>Micromonospora brunnea</i></b>	<i>Micromonospora purpureochromogenes</i> (Waksman and Curtis 1916) Luedemann 1971 (Approved Lists 1980). See IJSB, 1984, 34, 463-464
<b><i>Micromonospora rhodorangea</i></b>	<i>Micromonospora echinospora</i> Luedemann and Brodsky 1964 (Approved Lists 1980). See IJSEM, 2000, 50, 127-134
<b><i>Micropolyspora faeni</i></b>	<i>Micropolyspora rectivirgula</i> (Krasil'nikov and Agre 1964) Prauser and Momirova 1970 (Approved Lists 1980). See IJSB, 1983, 33, 663-665
<b><i>Myxococcus flavescens</i></b>	<i>Myxococcus virescens</i> Thaxter 1892 (Approved Lists 1980). See IJSEM, 2008, 58, 2607-2609

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<b><i>Nocardia calcarea</i></b>	<i>Rhodococcus erythropolis</i> (Gray and Thornton 1928) Goodfellow and Alderson 1979 (Approved Lists 1980). See IJSB, 1995, 45, 101-103
<b><i>Nocardia restricta</i></b>	<i>Rhodococcus equi</i> (Magnusson 1923) Goodfellow and Alderson 1977 (Approved Lists 1980). See IJSB, 1995, 45, 101-103
<b><i>Nocardiopsis alborubida</i></b>	<i>Nocardiopsis dassonvillei</i> (Brocq-Rousseau 1904) Meyer 1976 (Approved Lists 1980). See IJSB, 1997, 47, 983-988
<b><i>Nocardiopsis antarctica</i></b>	<i>Nocardiopsis dassonvillei</i> (Brocq-Rousseau 1904) Meyer 1976 (Approved Lists 1980). See IJSB, 1997, 47, 983-988
<b><i>Oceanospirillum beijerinckii</i> subsp. <i>pelagicum</i></b>	<i>Oceanospirillum beijerinckii</i> (Williams and Rittenberg 1957) Hylemon et al. 1973 (Approved Lists 1980). See Int. J. Syst. Evol. Microbiol., 2002, 52, 739-747
<b><i>Paenibacillus gordonae</i></b>	<i>Paenibacillus validus</i> (Nakamura 1984) Ash et al. 1994. See IJSB, 1995, 45, 661-669
<b><i>Peptococcus glycinophilus</i></b>	<i>Peptostreptococcus micros</i> (Prévot 1933) Smith 1957 (Approved Lists 1980). See IJSB, 1983, 33, 207-210
<b><i>Photobacterium histaminum</i></b>	<i>Photobacterium damsela</i> subsp. <i>damsela</i> corrig. (Love et al. 1982) Smith et al. 1991. See IJSEM, 2000, 50, 1339-1342
<b><i>Phyllobacterium rubiacearum</i></b>	<i>Phyllobacterium myrsinacearum</i> (ex Knösel 1962) Knösel 1984 emend. Mergaert et al. 2002. See IJSEM, 2002, 52, 1821-1823
<b><i>Porphyromonas salivosa</i></b>	<i>Bacteroides macacae</i> (Slots and Genco 1980) Coykendall et al. 1980. See IJSB, 1995, 45, 90-92
<b><i>Providencia friedericiana</i></b>	<i>Providencia rustigianii</i> Hickman-Brenner et al. 1983. See IJSB, 1986, 36, 565
<b><i>Pseudomonas antimicrobica</i></b>	<i>Burkholderia gladioli</i> (Severini 1913) Yabuuchi et al. 1993. See IJSEM 2000, 50, 2135-2139
<b><i>Pseudomonas aureofaciens</i></b>	<i>Pseudomonas chlororaphis</i> (Guignard and Sauvageau 1894) Bergey et al. 1930 (Approved Lists 1980). See IJSB, 1989, 39, 230-235
<b><i>Pseudomonas cattleyae</i></b>	<i>Pseudomonas avenae</i> Manns 1909 (Approved Lists 1980). See IJSB, 1991, 41, 516-525
<b><i>Pseudomonas chloritidismutans</i></b>	<i>Pseudomonas stutzeri</i> (Lehmann and Neumann 1896) Sijderius 1946 (Approved Lists 1980). See IJSEM, 2006, 56, 1463
<b><i>Pseudomonas mephitica</i></b>	<i>Janthinobacterium lividum</i> (Eisenberg 1891) De Ley et al. 1978 (Approved Lists 1980). See IJSEM, 2008, 58, 136-138
<b><i>Pseudomonas multiresinivorans</i></b>	<i>Pseudomonas nitroreducens</i> Iizuka and Komagata 1964 (Approved Lists 1980). See IJSEM, 2007, 57, 878-882

**Table 3: Later heterotypic synonyms removed from the All-Species Living Tree.**

**LTP\_s100**

Later heterotypic synonym	Earlier heterotypic synonym
<b><i>Pseudomonas perfectamarina</i></b>	<i>Pseudomonas stutzeri</i> (Lehmann and Neumann 1896) Sijderius 1946 (Approved Lists 1980). See IJSB, 1987, 37, 1-3
<b><i>Pseudomonas rubrilineans</i></b>	<i>Pseudomonas avenae</i> Manns 1909 (Approved Lists 1980). See IJSB, 1991, 41, 516-525
<b><i>Ralstonia eutropha</i></b>	<i>Cupriavidus necator</i> Makkar and Casida 1987. See IJSEM, 2004, 54, 2285-2289
<b><i>Rhizobium trifolii</i></b>	<i>Rhizobium leguminosarum</i> (Frank 1879) Frank 1889 (Approved Lists 1980). See IJSB, 1980, 30, 42-52
<b><i>Rhodococcus aurantiacus</i></b>	<i>Corynebacterium paurometabolum</i> Steinhaus 1941 (Approved Lists 1980). See IJSB, 1988, 38, 385-391
<b><i>Rhodococcus chubuensis</i></b>	<i>Gordonia sputi</i> corrig. (Tsukamura 1978) Stackebrandt et al. 1989. See IJSB, 1994, 44, 764-768
<b><i>Rhodococcus corallinus</i></b>	<i>Rhodococcus rubropertinctus</i> (Hefferan 1904) Tsukamura 1974 (Approved Lists 1980). See IJSB, 1980, 30, 521-527
<b><i>Rhodococcus luteus</i></b>	<i>Rhodococcus fascians</i> (Tilford 1936) Goodfellow 1984. See IJSB, 1994, 44, 627-630
<b><i>Rhodococcus obuensis</i></b>	<i>Rhodococcus sputi</i> Tsukamura 1978. See J. Gen. Microbiol., 1988, 134, 2807-2813
<b><i>Rhodococcus roseus</i></b>	<i>Rhodococcus rhodochrous</i> (Zopf 1891) Tsukamura 1974 (Approved Lists 1980). See IJSB, 1995, 45, 101-103
<b><i>Rhodopseudomonas rutila</i></b>	<i>Rhodopseudomonas palustris</i> (Molisch 1907) van Niel 1944 (Approved Lists 1980). See IJSB, 1992, 42, 186-188
<b><i>Rhodothermus obamensis</i></b>	<i>Rhodothermus marinus</i> Alfredsson et al. 1995. See IJSEM, 2000, 50, 1457-1461
<b><i>Roseivirga seohaensis</i></b>	<i>Roseivirga ehrenbergii</i> Nedashkovskaya et al. 2005. See IJSEM, 2008, 58, 1194-1197
<b><i>Roseomonas fauriae</i></b>	<i>Azospirillum brasilense</i> corrig. Tarrand et al. 1979 (Approved Lists 1980). See IJSEM, 2006, 56, 2753-2755
<b><i>Shewanella affinis</i></b>	<i>Shewanella colwelliana</i> (Weiner et al. 1988) Coyne et al. 1990. See IJSEM, 2007, 57, 347-352
<b><i>Sinorhizobium morelense</i></b>	<i>Ensifer adhaerens</i> Casida 1982. See IJSEM, 2003, 53, 2107-2110. See also See IJSEM, 2007, 57, 489-503
<b><i>Staphylococcus pulvereri</i></b>	<i>Staphylococcus vitulinus</i> corrig. Webster et al. 1994. See IJSEM, 2004, 54, 2213-2215
<b><i>Stenotrophomonas africana</i></b>	<i>Stenotrophomonas maltophilia</i> (Hugh 1981) Palleroni and Bradbury 1993. See IJSEM, 2004, 54, 1235-1237
<b><i>Streptococcus bovis</i></b>	<i>Streptococcus equinus</i> Andrewes and Horder 1906 (Approved Lists 1980). See IJSEM, 2002, 52, 1247-1255

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**LTP\_s100**

Later heterotypic synonym	Earlier heterotypic synonym
<b><i>Streptococcus caprinus</i></b>	<i>Streptococcus gallolyticus</i> Osawa et al. 1996. See IJSB, 1997, 47, 893-894
<b><i>Streptococcus constellatus</i></b>	<i>Streptococcus anginosus</i> (Andrewes and Horder 1906) Smith and Sherman 1938 (Approved Lists 1980). See IJSB, 1987, 37, 222-228
<b><i>Streptococcus difficilis</i></b>	<i>Streptococcus agalactiae</i> Lehmann and Neumann 1896 (Approved Lists 1980). See IJSEM, 2005, 55, 961-965
<b><i>Streptococcus intestinalis</i></b>	<i>Streptococcus alactolyticus</i> Farrow et al. 1985. See IJSB, 1999, 49, 737-741
<b><i>Streptococcus shiloi</i></b>	<i>Streptococcus iniae</i> Pier and Madin 1976 (Approved Lists 1980). See IJSB, 1995, 45, 840-842
<b><i>Streptococcus waius</i></b>	<i>Streptococcus macedonicus</i> Tsakalidou et al. 1998. See IJSEM, 2002, 52, 945-951
<b><i>Streptomyces albireticuli</i></b>	<i>Streptomyces eurocidicus</i> (Okami et al. 1954) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces albosporeus</i></b>	<i>Streptomyces aurantiacus</i> (Rossi Doria 1891) Waksman 1953 (Approved Lists 1980). See IJSEM, 2002, 52, 823-829
<b><i>Streptomyces alboverticillatus</i></b>	<i>Streptomyces griseocarneus</i> (Benedict et al. 1950) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces aminophilus</i></b>	<i>Streptomyces cacaoi</i> subsp. <i>cacaoi</i> (Waksman 1932) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2002, 52, 823-829
<b><i>Streptomyces arabicus</i></b>	<i>Streptomyces vinaceus</i> Jones 1952 (Approved Lists 1980). See IJSEM, 2005, 55, 7-8
<b><i>Streptomyces argenteolus</i></b>	<i>Streptomyces griseus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 1605-1610
<b><i>Streptomyces aureoversilis</i></b>	<i>Streptomyces hirosimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces baldaccii</i></b>	<i>Streptomyces hirosimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces biverticillatus</i></b>	<i>Streptomyces hirosimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces caviscabies</i></b>	<i>Streptomyces griseus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 1605-1610
<b><i>Streptomyces cavourensis</i> subsp. <i>washingtonensis</i></b>	<i>Streptomyces griseus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2008, 58, 2783-2787

**Table 3: Later heterotypic synonyms removed from the All-Species Living Tree.**

**LTP\_s100**

Later heterotypic synonym	Earlier heterotypic synonym
<b><i>Streptomyces chibaensis</i></b>	<i>Streptomyces corchorusii</i> Ahmad and Bhuiyan 1958 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces citreofluorescens</i></b>	<i>Streptomyces anulatus</i> (Beijerinck 1912) Waksman 1953 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces cochleatus</i></b>	<i>Streptomyces cinereorectus</i> Terekhova and Preobrazhenskaya 1986. See IJSEM, 2005, 55, 7-8
<b><i>Streptomyces distallicus</i></b>	<i>Streptomyces netropsis</i> (Finlay et al. 1951) Witt and Stackebrandt 1991. See IJSB, 1996, 46, 699-703, and See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces ehimensis</i></b>	<i>Streptomyces abikoensis</i> (Umezawa et al. 1951) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces erumpens</i></b>	<i>Streptomyces griseus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJDEM, 2008, 58, 149-159
<b><i>Streptomyces fervens</i></b>	<i>Streptomyces hirosheimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991, comb. Nov. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces flavidofuscus</i></b>	<i>Nocardiopsis dassonvillei</i> subsp. <i>dassonvillei</i> (Brocq-Rousseau 1904) Meyer 1976. See IJSEM, 2008, 58, 2321-2323
<b><i>Streptomyces flaviscleroticus</i></b>	<i>Streptomyces minutiscleroticus</i> (Thirumalachar 1965) Pridham 1970 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces flavopersicus</i></b>	<i>Streptomyces netropsis</i> (Finlay et al. 1951) Witt and Stackebrandt 1991. See IJSB, 1996, 46, 699-703, and See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces fluorescens</i></b>	<i>Streptomyces anulatus</i> (Beijerinck 1912) Waksman 1953 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces griseoverticillatus</i></b>	<i>Streptomyces cinnamoneus</i> (Benedict et al. 1952) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces griseus</i> subsp. <i>alpha</i></b>	<i>Streptomyces microflavus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces griseus</i> subsp. <i>cretosus</i></b>	<i>Streptomyces microflavus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces hachijoensis</i></b>	<i>Streptomyces cinnamoneus</i> (Benedict et al. 1952) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces kentuckensis</i></b>	<i>Streptomyces netropsis</i> (Finlay et al. 1951) Witt and Stackebrandt 1991. See IJSB, 1996, 46, 699-703, and See IJSEM, 2003, 53, 1519-1529

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Later heterotypic synonym	Earlier heterotypic synonym
<b><i>Streptomyces kishiwadensis</i></b>	<i>Streptomyces mashuensis</i> (Sawazaki et al. 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces laceyi</i></b>	<i>Streptomyces niveus</i> Smith et al. 1956 (Approved Lists 1980). See IJSEM, 2008, 58, 2812-2814
<b><i>Streptomyces ladakanum</i></b>	<i>Streptomyces mobaraensis</i> (Nagatsu and Suzuki 1963) Witt and Stackebrandt 1991. See IJSB, 1996, 46, 699-703, and IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces lipmanii</i></b>	<i>Streptomyces microflavus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980) emend. Lanoot et al. 2005. See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces luteovorticillatus</i></b>	<i>Streptomyces abikoensis</i> (Umezawa et al. 1951) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces nigrifaciens</i></b>	<i>Streptomyces flavovirens</i> (Waksman 1923) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Streptomyces niveus</i></b>	<i>Streptomyces caeruleus</i> (Baldacci 1944) Pridham et al. 1958 (Approved Lists 1980). See IJSEM, 2002, 52, 823-829
<b><i>Streptomyces olivoreticuli</i></b>	<i>Streptomyces abikoensis</i> (Umezawa et al. 1951) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces parvisporogenes</i></b>	<i>Streptomyces abikoensis</i> (Umezawa et al. 1951) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces phaeoviridis</i></b>	<i>Streptomyces phaeopurpureus</i> Shinobu 1957 (Approved Lists 1980). See IJSEM, 2005, 55, 7-8
<b><i>Streptomyces rectivorticillatus</i></b>	<i>Streptomyces hirosheimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces roseodiastaticus</i></b>	<i>Streptomyces tricolor</i> (Wollenweber 1920) Waksman 1961 (Approved Lists 1980). See IJSEM, 2005, 55, 7-8
<b><i>Streptomyces roseoflavus</i></b>	<i>Streptomyces fradiae</i> (Waksman and Curtis 1916) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 7-8
<b><i>Streptomyces roseosporus</i></b>	<i>Streptomyces filamentosus</i> Okami and Umezawa 1953 (Approved Lists 1980). See IJSEM, 2005, 55, 7-8
<b><i>Streptomyces roseovorticillatus</i></b>	<i>Streptomyces hirosheimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991, comb. Nov. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces salmonis</i></b>	<i>Streptomyces hirosheimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces sapporonensis</i></b>	<i>Streptomyces cinnamoneus</i> (Benedict et al. 1952) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces septatus</i></b>	<i>Streptomyces griseocarneus</i> (Benedict et al. 1950) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529

**Table 3: Later heterotypic synonyms removed from the All-Species Living Tree.**

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<b><i>Streptomyces setonii</i></b>	<i>Streptomyces griseus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 1605-1610
<b><i>Streptomyces spheroides</i></b>	<i>Streptomyces caeruleus</i> (Baldacci 1944) Pridham et al. 1958 (Approved Lists 1980). See IJSEM, 2002, 52, 823-829
<b><i>Streptomyces spitsbergensis</i></b>	<i>Streptomyces hirosimensis</i> (Shinobu 1955) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces syringium</i></b>	<i>Streptomyces netropsis</i> (Finlay et al. 1951) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces thermonitrificans</i></b>	<i>Streptomyces thermovulgaris</i> Henssen 1957 (Approved Lists 1980). See IJSB, 1999, 49, 7-17
<b><i>Streptomyces violatus</i></b>	<i>Streptomyces violaceus</i> (Rossi Doria 1891) Waksman 1953 (Approved Lists 1980) emend. Lanoot et al. 2002. See IJSEM, 2002, 52, 823-829
<b><i>Streptomyces viridiflavus</i></b>	<i>Streptomyces olivoverticillatus</i> (Shinobu 1956) Witt and Stackebrandt 1991. See IJSEM, 2003, 53, 1519-1529
<b><i>Streptomyces willmorei</i></b>	<i>Streptomyces microflavus</i> (Krainsky 1914) Waksman and Henrici 1948 (Approved Lists 1980). See IJSEM, 2005, 55, 729-731
<b><i>Thermoactinomyces candidus</i></b>	<i>Thermoactinomyces vulgaris</i> Tsilinsky 1899 (Approved Lists 1980). See IJSEM, 2000, 50, 1905-1908
<b><i>Thermoactinomyces thalpophilus</i></b>	<i>Thermoactinomyces sacchari</i> Lacey 1971 (Approved Lists 1980). See IJSEM, 2000, 50, 1905-1908
<b><i>Thermomonospora mesouviformis</i></b>	<i>Thermomonospora alba</i> (Locci et al. 1967) Cross and Goodfellow 1973 (Approved Lists 1980). See IJSB, 1998, 48, 411-422
<b><i>Thiobacillus concretivorus</i></b>	<i>Thiobacillus thiooxidans</i> Waksman and Joffe 1922 (Approved Lists 1980). See IJSEM, 2000, 50, 511-516
<b><i>Thiosphaera pantotropha</i></b>	<i>Paracoccus denitrificans</i> (Beijerinck and Minkman 1910) Davis 1969 (Approved Lists 1980). See IJSB, 1993, 43, 363-367
<b><i>Veillonella alcalescens</i></b>	<i>Veillonella parvula</i> (Veillon and Zuber 1898) Prévot 1933 (Approved Lists 1980). See IJSB, 1982, 32, 28-36
<b><i>Vibrio carchariae</i></b>	<i>Vibrio harveyi</i> (Johnson and Shunk 1936) Baumann et al. 1981. See IJSB, 1998, 48, 749-758
<b><i>Vibrio shilonii</i></b>	<i>Vibrio mediterranei</i> Pujalte and Garay 1986. See Syst. Appl. Microbiol., 2001, 24, 516-519
<b><i>Vibrio trachuri</i></b>	<i>Vibrio harveyi</i> (Johnson and Shunk 1936) Baumann et al. 1981. See IJSEM, 2002, 52, 973-976

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Later heterotypic synonym

Earlier heterotypic synonym

***Wautersia eutropha***

*Cupriavidus necator* Makkar and Casida 1987. See IJSEM, 2004, 54, 2285-2289

***Weissella kimchii***

*Weissella cibaria* Björkroth et al. 2002 See IJSEM, 2004, 54, 463-465

***Xanthomonas fuscans***

*Xanthomonas citri* (ex Hasse 1915) Gabriel et al. 1989. See IJSEM, 2009, 59, 306-318