



Figure 7. Maximum likelihood (ML) phylogenetic tree showing the position of representative bacterial 16S rDNA sequences from iron-sulfur crust close to a mud pool (SOL7) and melted deposits in the Northern fumarolic area (SOL18) samples. Only ML bootstrap values above 50% are shown at nodes. The scale bar corresponds to 10 substitutions for a unit branch length. CFB, *Cytophaga-Flexibacter-Bacteroides* group.

comparison, since they are quite distant from the few currently isolated species (Figure 7). Furthermore, the lack of more isolated strains from this broad division may imply that current culture media are not suitable for their growth and that these organisms may display novel metabolic strategies. Since many of these lineages are identified in metal-rich, acidic thermal areas, they may possibly rely on some type of strict or chemolithoautotrophic metabolism.

CONCLUDING REMARKS

We have applied a multidisciplinary analysis to the study of hydrothermal deposits from the Solfatara crater, involving geology, micropaleontology, organic chemistry and molecular microbiology methods. The hydrothermal deposits were young (~4,000 years old), mildly hot to hot (40–95°C) and acidic (pH ~1.7). Chemical conditions were predominantly anoxic and reducing, although oxic/anoxic transition zones existed in