

A thermophilic anaerobic bacterium (strain TH7C1 T) was isolated from the hydrothermal hot spring of Guelma in the northeast of Algeria. Strain TH7C1 T stained Gram-positive, was a non-motile rod appearing singly, in pairs, or as long chains (0.7–1.9 × 2–6 μm). Spores were never observed. It grew at temperatures between 55 and 75 °C (optimum 65 °C) and at pH between 6.2 and 8.3 (optimum 6.9). It did not require NaCl for growth, but tolerated it up to 5 g l<sup>-1</sup>. Strain TH7C1 T is an obligatory heterotroph fermenting sugars including glucose, galactose, lactose, raffinose, fructose, ribose, xylose, arabinose, maltose, mannitol, cellobiose, mannose, melibiose, saccharose, but also xylan, and pyruvate. Fermentation of sugars only occurred in the presence of yeast extract (0.1%). The end-products from glucose fermentation were acetate, lactate, ethanol, CO<sub>2</sub>, and H<sub>2</sub>. Nitrate, nitrite, thiosulfate, elemental sulfur, sulfate, and sulfite were not used as electron acceptors. The G + C content of the genomic DNA was 44.7 mol% (HPLC techniques). Phylogenetic analysis of the small-subunit ribosomal RNA (rRNA) gene sequence indicated that strain TH7C1 T was affiliated to Firmicutes, order Clostridiales, family Caldicoprobacteraceae, with *Caldicoprobacter oshimai* (98.5%) being its closest relative. Based on phenotypic, phylogenetic, and genetic characteristics, strain TH7C1 T is proposed as a novel species of genus *Caldicoprobacter*, *Caldicoprobacter algeriensis*, sp. nov. (strain TH7C1 T = DSM 22661 T = JCM 16184 T)