

"*Candidatus Combothrix italica*"

Resembles: several other *Alphaproteobacteria* and *N. limicola* I and III

Probes: class specific: ALF-968 [7]; species specific: Combo-1031 [6]

Frequency occurrence (200 samples; 175 WTPs):

- observed with a FI \geq 1 in 10 samples
- observed with a FI \geq 3 in 3 samples



Characteristics

- bent/curled filaments, occasionally tangled;
- free in the liquid phase as well as inside and around the flocs;
- filament length usually $> 200 \mu\text{m}$;
- filaments not branched;
- not motile;
- cell diameter usually $1.1 - 1.5 \mu\text{m}$;
- no sheath;
- attached growth absent;
- septa and constrictions clearly visible;
- disc or more discoid shaped cells; occasionally single cells inside a filament with a diameter of ca. $2.5 \mu\text{m}$ (bulged cells);
- occasionally 'parallel' growth of cells in a filament;
- no sulphur storage;
- Gram negative or somewhat Gram variable;
- usually Neisser negative, rarely faintly positive.

See "*Candidatus Alysiomicrobium bavaricum*" for remarks, physiology, occurrence in activated sludge, control options and references.

Slide show images

- 1-2: morphology at a low magnification
- 3-9: morphology at a high magnification
 - 7: 'parallel' growth of cells inside a filament
 - 8: plus Type IF-10
 - 9: bulged cells in a filament (plus Type IF-23)
- 10: Gram stained
- 11: FISH image with probe Combo-1031