

## Abstract

Denitrification reactions are carried out by denitrifying bacteria, which transform the nitrate ions to nitrite and then to atmospheric nitrogen. In this work, two strains B and C were isolated from an activated sludge and incubated separately in a bioreactor containing a synthetic medium rich in nitrate ions. The Griess test and zinc powder have proved the difference between denitrification capacity of the two selected strains. Therefore, strain B was able to reduce nitrate to nitrite as final product of the reduction. Nevertheless, the strain C had the ability of the complete reduction until the last stage passing through nitrite to atmospheric nitrogen, which gave also a reduction percentage of 75 % with a significant growth rate, in synthetic minimal medium. Finally, both bacteria, B and C were identified and tested on microscope