Feasibility study on the use of recombinant Neisseria gonorrhoeae carbonic anhydrase in CO_2 capture process

김창섭, 임석일, 조영화, 조병훈, 서정현, 안치규, 차형준*
POSTECH
(hjcha@postech.ac.kr*)

Since the twentieth century, the temperature of the earth has rapidly increased. This phenomenon, called global warming, takes many ecological problems and carbon dioxide (CO2) is known as main cause to occur global warming. In this situation, many researchers have tried to decrease the emission of CO2 and develop 'CO2 capture process' by capturing CO2 to amine- or ammonia-based absorbent. Recently, CO2 capture process with help of biological way which uses carbonic anhydrase (CA) has been received great attention. CA biocatalysts are known as metalloenzymes which rapidly inter-convert CO2 to bicarbonate. In this work, we performed feasibility study on the suitability of recombinant Neisseria gonorrhoeae CA (ngCA) produced in Escherichia coli for the use of CO2 capture processes.