

### Characterization of recombinant *Neisseria* carbonic anhydrase

임슬기, 조병훈, 서정현, 차형준\*  
POSTECH  
(hjcha@postech.ac.kr\*)

Recently, carbon dioxide fixation using natural biomineralization process with carbonic anhydrase (CA) and conversion to calcium carbonate have been focused. Unlike physical or chemical carbon dioxide fixation, biomineralization using CA has advantages such as environment-friendly process under normal temperature and pressure. Because CA catalyzes hydration of carbon dioxide into bicarbonate in water, it could be used for deducing carbon dioxide and producing calcium carbonate through reaction with calcium ion. In our previous study, we found that recombinant *Neisseria* CA (NCA) showed comparable CO<sub>2</sub> hydration activity to commercial bovine-derived CA (BCA) and mediated efficient biomineralization reaction. In this work, we characterized this recombinant NCA to use in real flue gas environment. Development of recombinant NCA system could be an efficient carbon dioxide reduction technology.