

Biomolecular Purification with Aminosilanes Anchored Mesoporous Silicas

조민애^{1,2}, 장정호^{1,*}, 김우년²

¹한국요업(세라믹)기술원 나노소재응용본부;

²고려대학교 화공생명공학과

(jhchang@kicet.re.kr*)

The work describes the innovative development of high throughput human DNA and protein purification using the molecular self-assembled mesoporous silicas. The synthesis of mesoporous silicas was involved a sol-gel process, and the formation of aminofunctionalized monolayers was chemically grafted. The target DNA and proteins were used from human blood, and commercialized lysozyme, respectively. The result showed the optimum effect on the number of aminofunctional groups, their recovery efficiency was enhanced to 90%~100%. The use of functionalized mesoporous silica for DNA and protein purification process give a lot of advantages rather than use of conventional silica based materials.