

## The High Yields Purification of Human DNA with Functionalized Self-Assembled Mesoporous Silicas

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This work describes the innovative development of high throughput human DNA purification process using the molecular self-assembled mesoporous silicas. The mesoporous silicas were prepared by sol-gel method and the formation of molecular self-assembled monolayers on the mesoporous silica with functional groups was chemically demonstrated. The surface modification of functional groups was performed with amino-functionalized organosilanes. The characterization of the prepared amino-functionalized self-assembled mesoporous silicas was obtained by BET, FT-IR(ATR-method), and TG. The solid-state <sup>29</sup>Si, <sup>13</sup>C-NMR were used to determine the chemical information of the aminofunctionalized mesoporous silicas surroundings on the Si, and C, respectively. The DNA binding result shows the optimum values as a function of functional groups and their efficiencies were also calculated.