

Eco-friendly water mediated green protocol for azido alcohol synthesis from epoxide over recyclable polymer supported penta-ethylene glycol catalyst in ambient condition

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The present study describes one pot azido alcohols synthesis from epoxide using polymer supported pentaethylene glycol catalyst in water at ambient condition. A systematic engineered catalyst, pentaethylene glycol chain supported on Merrifield resin was synthesized successfully. By using modern analytic and spectroscopic technique catalyst was analyzed and characterized. These results showed that, penta ethylene glycol chain is successfully anchored on polymer support. To determine the catalytic activity of prepared catalyst, azido alcohol synthesis reaction was conducted in water using 0.1 equiv. amount of catalyst. Results reveal that, catalyst has outstanding catalytic property by viewing 100 % conversion of epoxide and 92 % selective yield of azido alcohol in short reaction time at room temperature. In addition, effects of other reaction parameters were also determined. Recyclability of catalyst was also determined. This work was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (No. 2009-0093816).