GENERAL REMARKS

- Melting points were recorded on Polmon Melting point apparatus and are uncorrected.

- Infrared spectra were recorded on Perkin-Elmer Infrared spectrophotometer with NaCl optics. Spectra were calibrated against the polystyrene absorption at 1610 cm$^{-1}$. Samples were scanned either in neat, KBr wafers or in chloroform as a thin film.

- $^1$H NMR and $^{13}$C NMR spectra were recorded on either Varian Gemini 200 or Varian Unity 400 or BrukerAvance 300 MHz. The samples were made in CCl$_4$/CDCl$_3$ (1:1) using tetramethylsilane as the internal standard and are given in $\delta$ scale. The standard abbreviations s, d, t, q, qt, m, dd, dt and br.s refer to singlet, doublet, triplet, quartet, quintet, multiplet, doublet of a doublet, doublet of a triplet and broad singlet respectively.

- Mass spectra were recorded on AGILENT 1100 LC-MSD mass spectrometer for ESI and AGILENT 1200 Q-TOF for HRMS.

- The optical rotations were recorded on ANTONPAAR MCP 200 (Modular Circular digital polarimeter).

- Analytical thin layer chromatography (TLC) was performed on precoated silica gel 60-F$_{254}$ (0.5-mm) glass plates. Visualization of the spots on TLC plates was achieved either by exposure to iodine vapor or UV light or by dipping the plates into methanolic sulphuric acid-$\beta$-napthol or to ethanolic aldehyde-sulphuric acid-acetic acid or to ethanolic ninhydrin solution and heating the plates to 120 °C.

- Column chromatography was performed using silica gel (60-120, 100-200 mesh) and the column was usually eluted with ethyl acetate-petroleum ether, methanol-chloroform (60-80 °C) system unless mentioned specifically.

- Enantiomeric excess were determined by using chiralcel OB-H column and was recorded on SHIMADZU HPLC.
Moisture sensitive reactions were carried out using standard syringe septum techniques.

All solvents and reagents were purified by standard techniques. All evaporation of solvents was carried out under reduced pressure on Buchi RE-121 rotary evaporator below 45 °C.

Yields reported are isolated yields of material judged homogeneous by TLC and NMR spectroscopy.

The names of all the compounds given in the experimental section were taken from ACD/Name, Version 1.0 and ChemDraw Ultra 9.0.