

## Chapter two

### 2. Materials and methods

#### 2.1 Chemical synthesis and compounds

##### 2.1.1 Chemicals

The following chemicals and material were used: *cis*-1,2,3,6-Tetrahydrophthalimide 96% (SIGMA ALDRICH), propargyl bromide (SIGMA-ALDRICH), piperidine 99% reagent plus (SIGMA), 2-methylpiperidine 99%(alpha Aesar), 2,6- Dimethylpiperidine, pyrrolidine 98%, N-Methylpiperazine 99% (ALDRICH) , Hexamethyleneimine 98% (Alfa Aesar) , Ethanol ( Gianland chemical company), 1,4-Dioxan (FullTime), Chloroform , Paraformaldehyde (BDH chemicals) , Cuprous chloride.

##### 2.1.2 Instrumentation.

Infrared spectra (IR): FTIR Bruker.

$^1\text{H}$  NMR was required with the aid of Varian 300 MHz spectrometer and DMSO- $d_6$  as solvent. The analysis was indicated by EuroEA elemental analyser. The result obtained had a maximum deviation of (3.6%) from the theoretical value, which is considered within the acceptable variation range in results ( $\pm 4.4\%$ ). This variation range is set according to the accuracy of EuroEA elemental analyser device in Faculty of Pharmacy in the University of Jordan.