Summary

The importance of phenothiazine in pharmaceutics as drug prompts to synthesize 2-aryl-γ-pyrano-(2,3,5',6')-phenothiazines and β-propionylbenzylidinedyrazine-phenothiazine and screen for biological activity.

Part 1:

This part describes the preparation of 2,10-diacetyl-3-hydroxyphenothiazine, a staring compound for the synthesis of 2-aryl-γ-pyrano-(2,3,5',6')-phenothiazines from 4-methoxyphenothiazine, which was obtained from p-anisidine & 2-chlorobenzoic acid in four steps.

![Chemical structures]

Part 2:

This part consists of synthesis of 2-aryl-γ-pyrano-(2,3,5',6')-phenothiazines from 2,10-diacetyl-3-hydroxyphenothiazine in three steps. The structure of these compounds was confirmed by their spectral and nitrogen analysis.

**Scheme:**

![Chemical structures]
Part 3:

This part describes the synthesis of N-β-propionylbenzylidinehydrazine-phenothiazine derivatives by the condensation of different aldehydes with β-(10-phenothiazynyl)-propionylhydrazide, which was obtained from phenothiazine in three steps. The structure of these compounds was confirmed by their spectral and elemental analysis.

This part also consists of screening results of N-β-propinylbenzylidinehydrazine-phenothiazine derivatives showing promising CNS depressant activity.