

UNIVERSITI TEKNOLOGI MARA

**SYNTHESIS OF HYDRAZONE DERIVATIVES OF
QUINOLINE**

AMIRA SAFWANI BINTI ABD RAHIM

FACULTY OF PHARMACY

UNIVERSITI TEKNOLOGI MARA (UiTM)

BACHELOR OF PHARMACY

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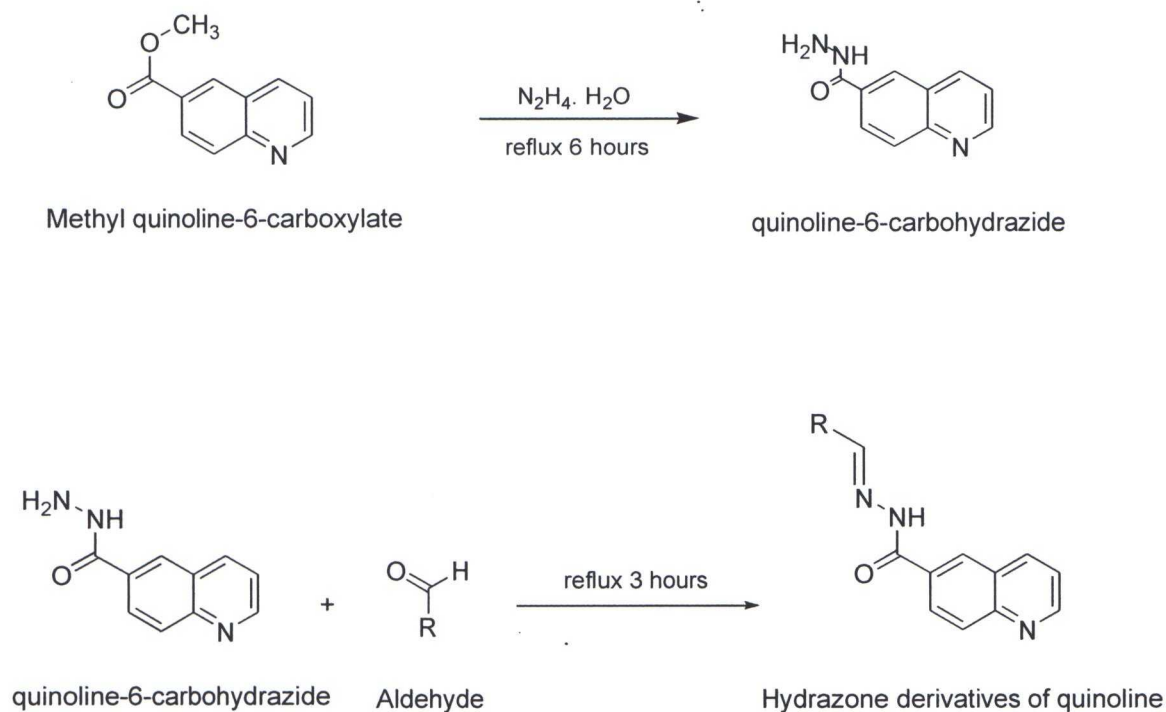
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ABSTRACT

Twenty five new series of hydrazones derivatives of quinoline were synthesized starting from quinoline-6-carbohydrazide. Firstly, methyl quinoline-6-carboxylate was reacted with hydrazine hydrate to form quinoline-6-carbohydrazide as a starting material. Then, it was converted into twenty five new series of hydrazones derivatives of quinoline by treating with twenty five different aldehydes as shown in the reaction scheme.



CHAPTER 1

INTRODUCTION

1.1 Introduction

Quinoline is the condensed nitrogen heterocyclic compound normally occurs in the nature as important components of plant or animal organs for specific activity. Quinoline and its derivatives are well known and exhibit wide spectrum of pharmacological activities. Many quinoline derivatives have been reported to possess anti-tuberculosis, anti-malarial, anti-inflammatory, anticancer, antihypertensive, antiHIV (Eswaran, Adhikari, Chowdhury, Pal & Thomas, 2010), antibacterial, antiasthmatic (Azad, Ali Munawar & Siddiqui, 2007), kinase inhibitors, antifungal and anticonvulsant (Saugues, Nauton, Théry, Anizon, & Moreau, 2011). Structurally, quinoline can be readily modified by organic synthesis to generate libraries consisting of a diverse range of derivatives with a broad range of substituent groups whereby different members can show different biological effects (Kazi et al., 2010). As part of our effort, we have used quinoline as a scaffold to synthesize a small library of derivatives containing different aldehyde substituents.

Reaction between carbonyl whether ketone or aldehyde with hydrazine, a functional group containing nitrogen-nitrogen bond will yield hydrazone possessing an azomethine -NHN=CH- proton (Rollas & Küçükgülzel, 2007). Hydrazone is also an important compound because of their pharmacological properties such as antioxidant, antiatherogenic (Belkheiri et al., 2010), anticonvulsant, antidepressant,