Aim of the work

Radiopharmaceuticals have wide spread application in nuclear medicine. Among the various types of radiopharmaceuticals used for diagnostic purpose are the technetium-99m labelled iminodiacetic acid derivatives **Elkolaly et al (2003) and M.A.Motaeleb et al (1999).**

The aim of the present work is to synthesize the following iminodiacetic acid (IDA) derivatives: -

1) 2-N, N (dicarboxyaminoacetyl) aminopyridine (DCAA-AP)

2) 2-N, N (dicarboxyaminoacetyl) aminothiazole. (DCAA-AT)

The obtained compounds are characterized using different analytical techniques (Elemental analysis, IR, NMR and Mass spectroscopy), and then labelled with technetium-99m by the direct labelling techniques.

The thesis also aims to study the factors affecting the percent labelling yields of ^{99m}Tc – DCAA-AP, ^{99m}Tc – DCAA-AT and ^{99m}Tc – Br-IDA derivatives with technetium-99m. These factors include the amount of IDA derivatives, the amount of Sn (II), the pH, the reaction time and the temperature of the reaction mixture. The ^{99m}Tc – IDA complexes will be evaluated biologically in the experimental animals (mice).