

M.Sc. Proposal in
Medical Physics

**Evaluation of Haematological and
Biochemical Effects of Magnetic
Resonance Imaging (MRI) for
Human volunteers**

By

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The Objectives

The main objectives of this research project are

- 1)** Evaluation of the effects of high magnetic frequency on the biochemical tests for **Human volunteers**
- 2)** Identify the effects of high magnetic frequency on the hematological evvective parameters using MRI.
- 3)** Optimizing the time of exposure (duration time) and magnetic intensity (tesla) that make significant effects on human blood cells

Research Importance

The importance of this research project is to summarize the hematological and biochemical effects of high magnetic intensity regarded to the MRI exams (for short and long time-periodic)

Summary of the research proposal

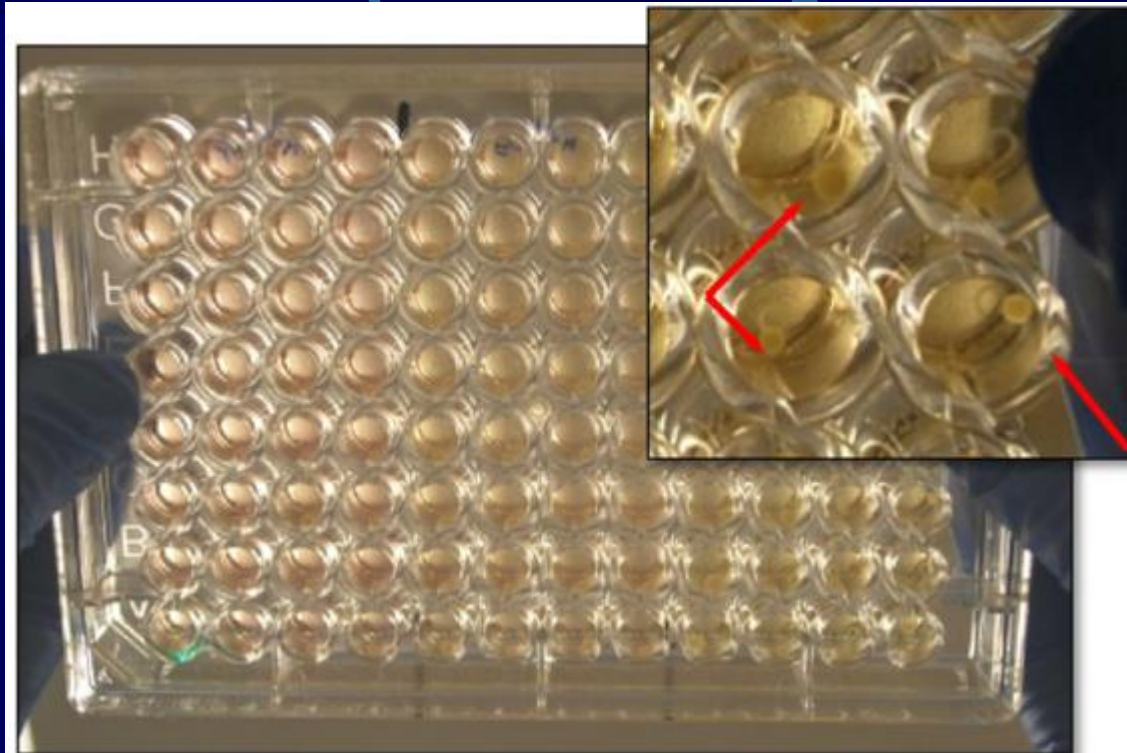
This research project aims to identify the effects of high magnetic frequency on the biochemical and hematological parameters for the patients using Magnetic Resonance Imaging (MRI) scan. The data will be collecting from more than 50 male donors (before and after using MRI) inside some hospitals in Kurdistan region. Time of the exposure, tesla (dose), and the duration of exposure procedures are variable parameters within this research (in addition of biochemical tests before and after exposure) . Statistical analysis will be done for the data to get optimum and significant parameters for each stage of the research (exposure stages).

Methodology and data collection

The data will be collecting from blood samples for more than 50 male donors (before and after using MRI) inside some hospitals in Kurdistan region. Time of the exposure, tesla (dose), and the duration of exposure procedures are variable parameters within this research. Statistical analysis will be done for the data to get optimum and significant parameters for each stage of the research

Equipment and some terminology

96-multiwell plates containing the cells grown





SIEMENS



MAGNETOM Aera
A Tim and Dot System

**All the equipment and
devices that are
retaliated (direct and
un-direct) to the
hematological and
biochemical tests are
available**

Terminology

What I have to measure and / or calculate?

Hematological tests

- 1) White blood cells (WBCs), red blood cells (RBCs), and plate count (PLT))
- 2) Blood viscosity
- 3) ESR

Biochemical Tests

- 1) Alanine aminotransferase (ALT),
- 2) alkaline phosphatase (ALP), gamma-glutamyltransferase (GGT), and uric acid (UAC) }
- 3) K^+ , Na^+ concentration with pH levels in the blood samples.

Thanks for your attention

**Any comments supporting my
proposal?**