

**SUMMARY OF PROPOSED RESEARCH**  
(Do not exceed the space provided)

Describe clearly and concisely, in language readily understandable to a biomedical scientist who may not be a specialist in the research project's field, the broad objectives, specific aims, general procedures, and the potential significance of the research.

**Project Summary**

Male infertility is known to contribute significantly to infertility problems experienced by couples. Impaired sperm function is an obvious and general cause of male infertility. Studies have shown that 40%-88% of non-selected infertile patients have high levels of seminal reactive oxygen species (ROS). Excessive ROS production causes oxidative stress, resulting in damage of spermatozoa. The source of ROS, which causes this damage, involves both polymorphonuclear leukocytes and defective spermatozoa. However, the role played by leukocytes in human ejaculate is currently the subject of much controversy. There are numerous reports about the damaging role of leukocytes on sperm function. Several studies, on the other hand, couldn't confirm negative effects of leukocytes on male fertility parameters. The objectives of our study are to identify the source of seminal ROS in a population of infertile men with and without leukocytospermia, study the difference in semen characteristics between these two groups, measure the amount of leukocyte contamination in seminal ejaculates, measure ROS production, antioxidant capacity and DNA damage and compare them with a population of normal healthy donors (controls).

The results from our study may help in improved management of infertile patients with various amounts of leukocyte contamination that are undergoing assisted reproduction. In these patients, purified sperm suspensions can be prepared with the use of anti CD45 coated paramagnetic beads.

Please provide five Key Words that best describe your project:

- (1) leukocytospermia                      (2) oxidative stress                      (3) reactive oxygen species  
(4) anti-oxidants                      (5) male infertility