



# **The Effect of Adipose Tissue-Derived Mesenchymal Stem Cells on the Testis of Chemically-Induced Castration Model by Calcium Chloride in Adult Albino Rats**

## **Thesis**

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## **List of Abbreviations**

ABP: Androgen binding protein

ADMSCs: Adipose tissue derived mesenchymal stem cells

BCG: Bacillus Calmette–Guérin

BMMSCs: Bone marrow mesenchymal stem cells

CaCl<sub>2</sub>: Calcium chloride

CD: Cluster of differentiation

DMEM: Dulbecco's modified Eagles medium

EDTA: Ethylene diammine tetracetic acid

EPS: Endothelial progenitor cells

ESCs: Embryonic stem cells

FBS: Fetal bovine serum

FNA: Fine-needle aspiration

FSH: Follicle stimulating hormone

GnRH: Gonadotropin-releasing hormone

HCG: Human chorionic gonadotrophin

HSC: Hematopoietic stem cells

ICSI: Intra-cytoplasmic sperm injection

IVF: In vitro fertilization

LH: Luteinizing hormone





## List of Abbreviations

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MFI: Male factor infertility

MSCs: Mesenchymal stem cells

NOA: Non obstructive azoospermia

P3: passage 3

PBS: Phosphate buffer saline

PLA: Processed lipo aspirate

POH: Progressive osseous heteroplasia

ROS: Reactive oxygen species

RPM: Round per minute

SCO: Sertoli cell only

SERM: Selective estrogen receptor modulators

SSCs: Spermatogonial stem cells

STs: Seminiferous tubules

SVF: Stromal vascular fraction

TEM: Transmission electron microscope

TESA: Testicular sperm aspiration

TESE: Testicular sperm extraction



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