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Valuation the effect of mesenchymal stem cell derived exosomes on male infertile as a novel treatment

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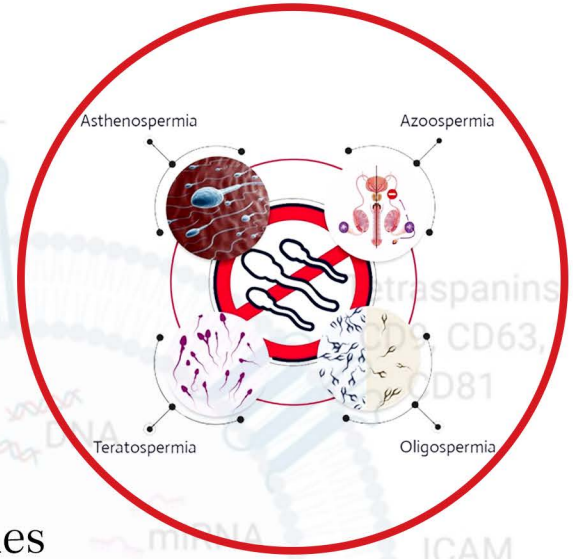
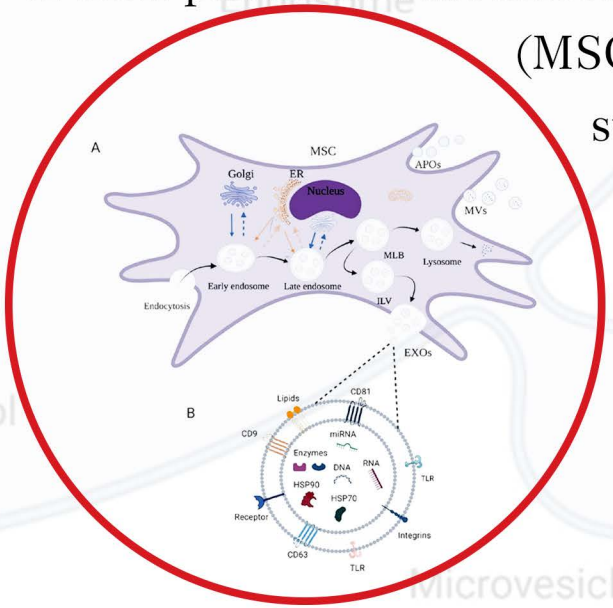
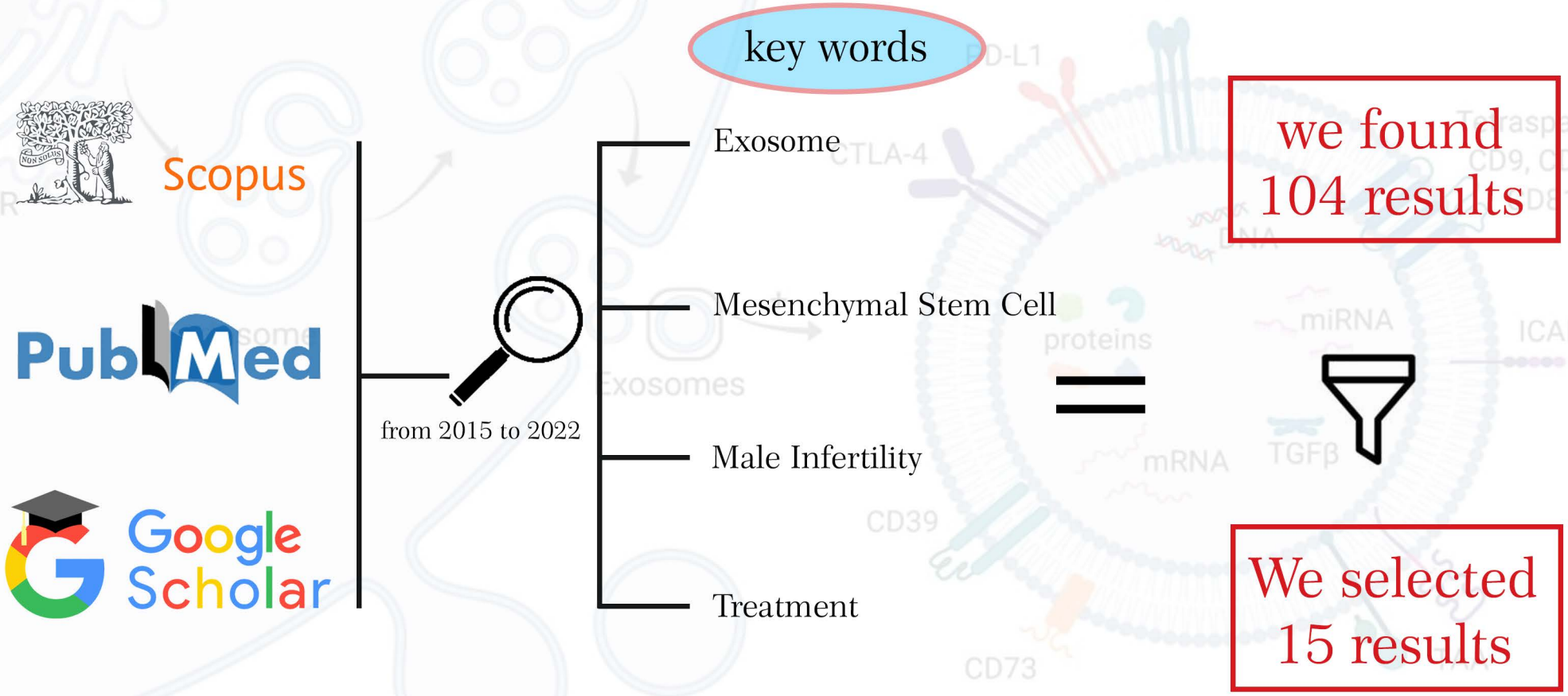
Introduction :



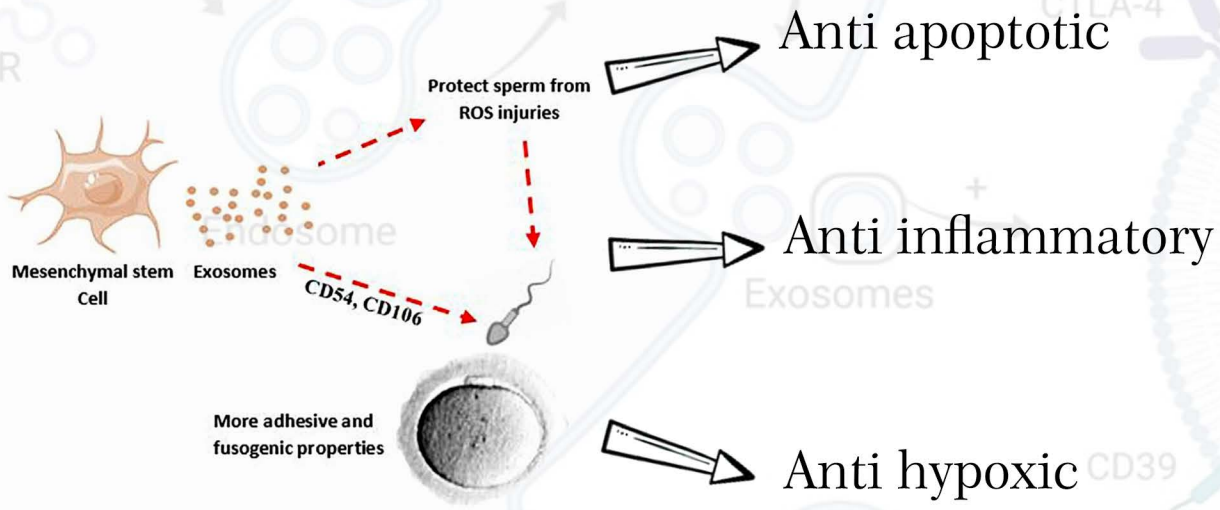
Infertility is now discussed to be a global health issue affecting about 15% of couples worldwide and It may arise from agents relevant to the male (30%), including varicocele, undescended testes, testicular cancer, and azoospermia. The novel experimental methods of the infertility treatment are stem cell and exosome applications. Because of the limitations using live cells injections and also the therapeutic effect of their paracrine substances, Mesenchymal Stem Cells derived exosomes (MSC-EXO) containing bioactive molecules have been recently used in studies of infertility treatment. In this review, we evaluate the effect of MSC-EXO on male infertile as a novel therapy.



Materials and Methods:



Results:



They can induce cell proliferation, cell viability, migration, oogenesis, spermatogenesis, capacitation and acrosome reaction. Studies results have shown the MSC-EXO ability to regenerate the damaged sperm, treating asthenozoospermia by their repairing molecules and counteracting with the reactive oxygen species. Also, it has been reported that MSC-EXO are able to induce the process of spermatogenesis in the testes of infertile animal models

Conclusion:

Male infertility is very complicated pathogenically and there is no ideal method for its treatment. These findings indicate that may be exosomes secreted by mesenchymal stem cells helpful in the novel treatments of male infertility.

Keywords:

Exosome, Mesenchymal Stem Cell, Male Infertility and Treatment.

Reference

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