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A review of avian stem cell therapy: A promising health intervention strategy in poultry systems

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Abstract: Stem cells are multi-lineage cells that can be differentiated into many other types of cells under specific conditions. Mesenchymal stem cells (MSCs) or hematopoietic cells are spindle-shaped cells that mainly originate from the bone marrow and are used in different aspects of tissue engineering. The avian MSCs are also derived from chicken embryos and 1 to 14-day-old chicks. There are many sources from which the avian

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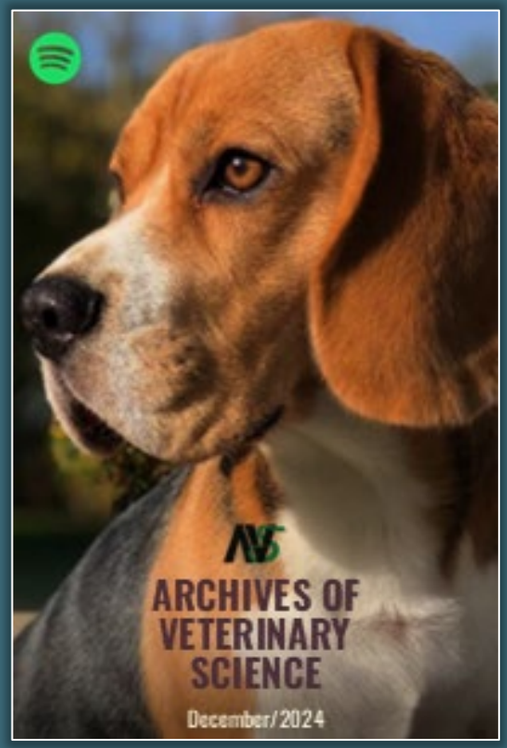

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ABSTRACT

Stem cells are multi-lineage cells that can be differentiated into many other types of cells under specific conditions. Mesenchymal stem cells (MSCs) or hematopoietic cells are spindle-shaped cells that mainly originate from the bone marrow and are used in different aspects of tissue engineering. The avian MSCs are also derived from chicken embryos and 1 to 14-day-old chicks.

ABSTRACT

There are many sources from which the avian MSCs could be isolated, including amnion, skin, lungs, cartilage, neurons, adipose tissues, and kidneys. Recently, avian MSCs have been used in different poultry aspects such as treating bone and skin affections, preventing some immunosuppressive viral diseases, and improving gut health.

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ABSTRACT

Therefore, this review article spotlights avian MSCs regarding their sources and different applications in the poultry field.

Keywords: Avian mesenchymal stem cells; bone and skin affections; disease prevention; gut health.

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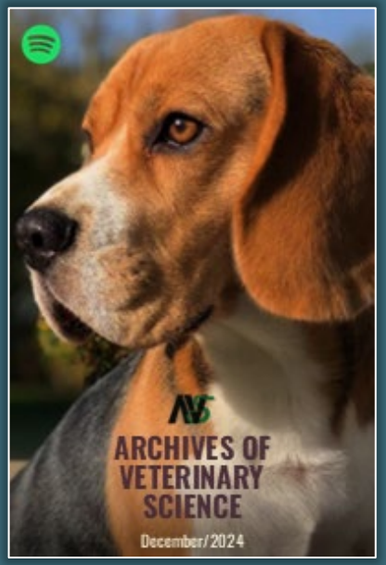

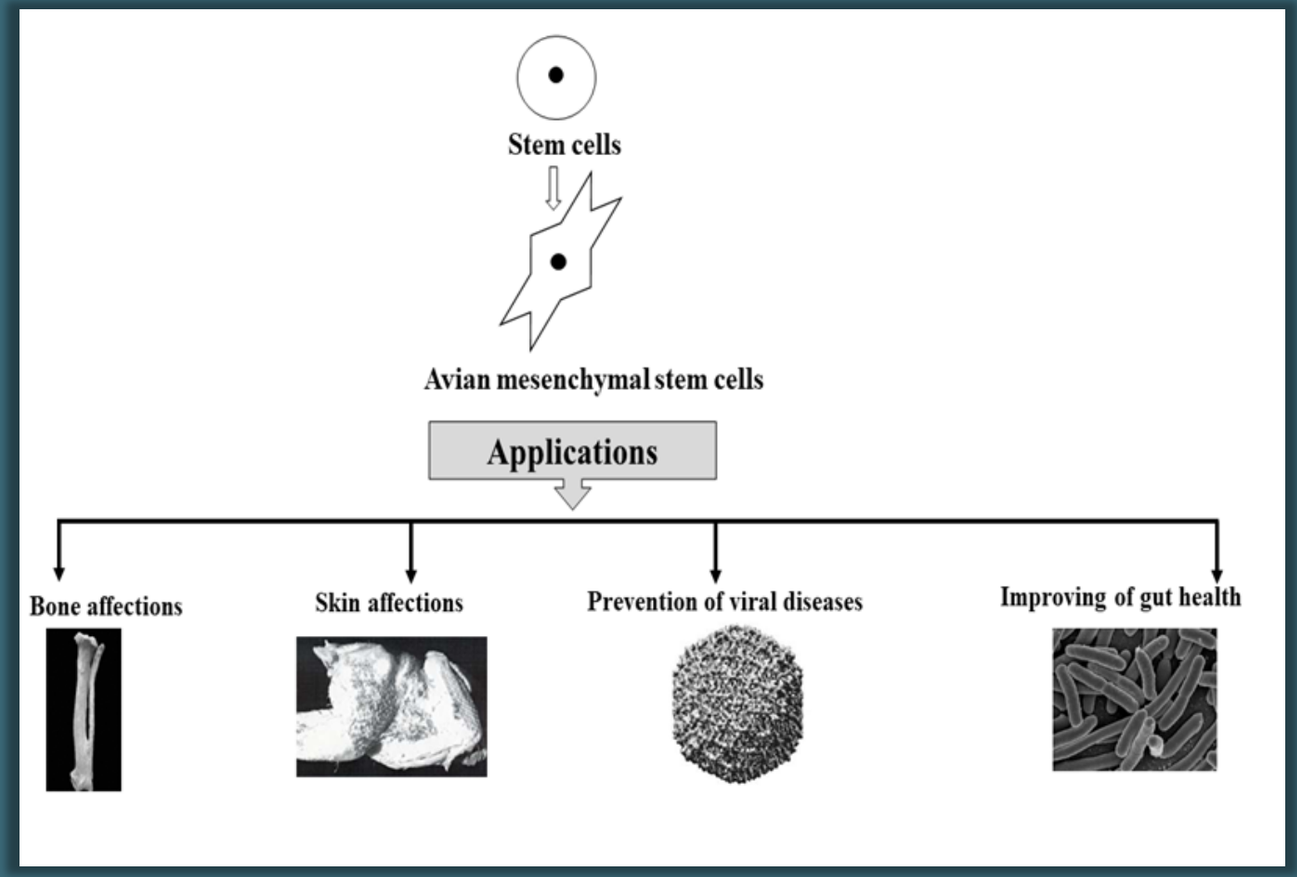

Figure 1 – The different applications of MSCs in the poultry field.

CONCLUSION

Very little is known about the pathogenesis of avian MSCs. Besides, few studies showed the beneficial effects of avian MSCs. Therefore, research on the properties of avian multipotent stem cells is needed, which will lead to renewed interest in their extended applications in the poultry field.

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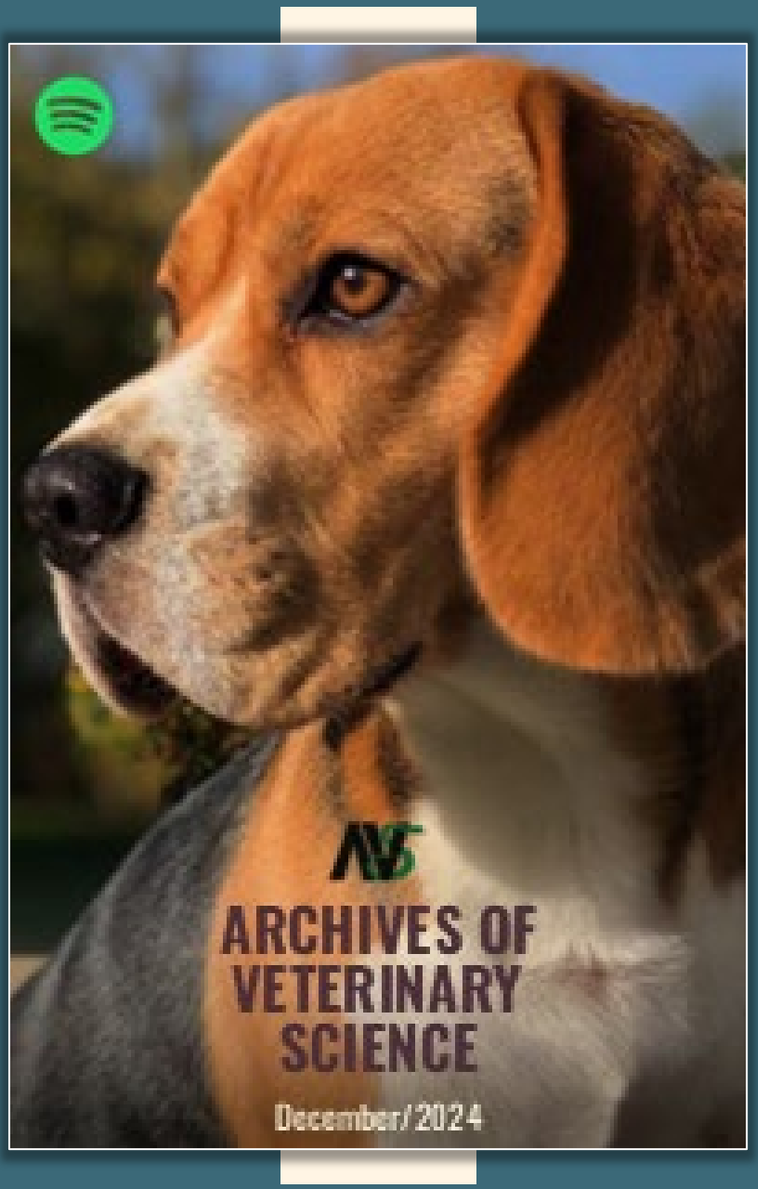

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