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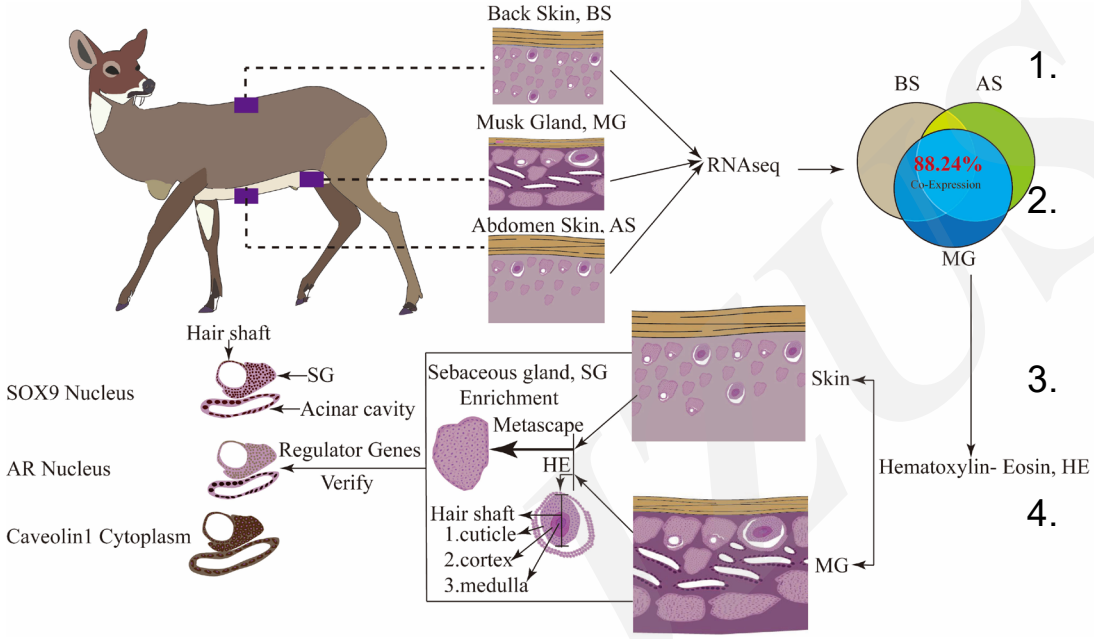
Genetic and histological relationship between pheromone-secreting tissues of the musk gland and skin of juvenile Chinese forest musk deer (*Moschus berezovskii* Flerov, 1929)

Key words: Musk deer; Pheromones; Musk gland; Skin tissues; Transcriptome; Sebaceous glands

Research Summary

This article mainly focused on Genetic and histological relationship between the musk gland and skin of juvenile Chinese forest musk deer, and obtains the following aspects:



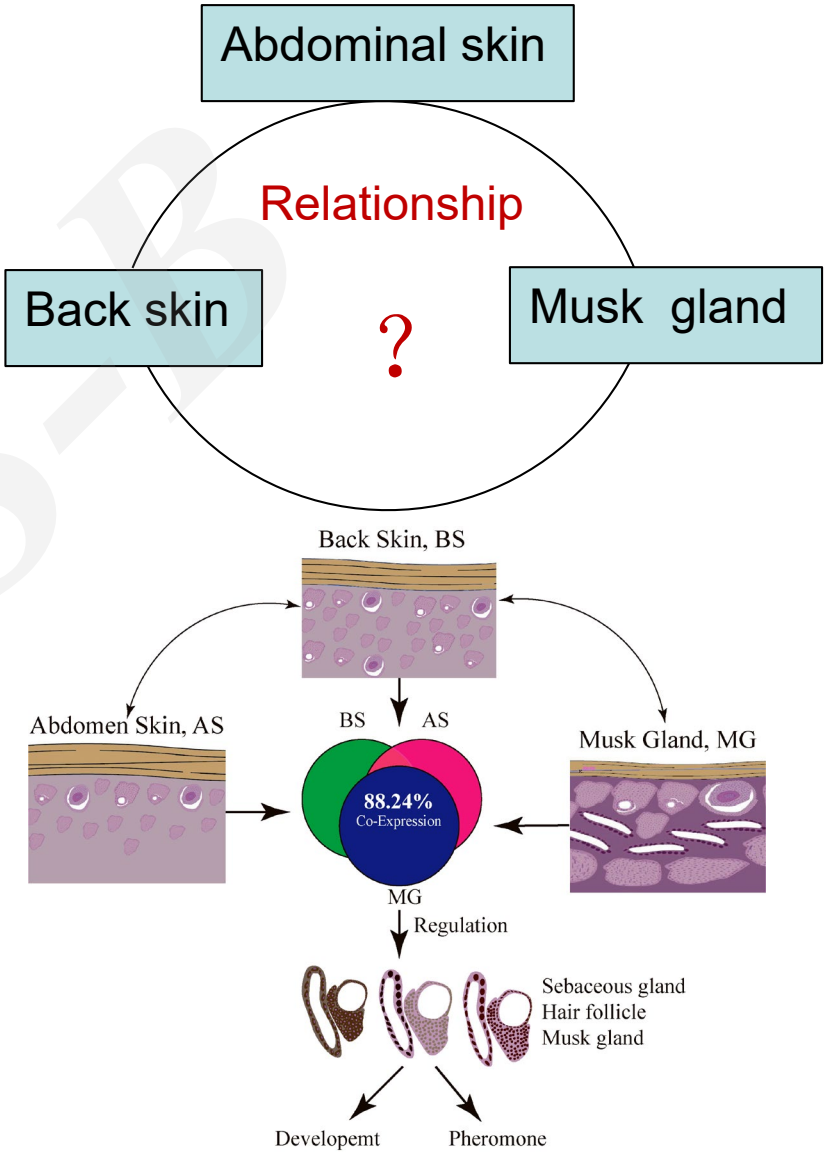
1. Sebaceous glands are present in the back ski abdominal skin and musk gland in the spati structure of Chinese forest musk deer (FMD).
2. The transcriptome results revealed that up 88.24% of the genes were co-expressed in sk and musk gland tissues, and their key regulato genes were expressed among of them.
3. The Metascape predictive analysis to demonstrated that genes expressed in mus glands were skin tissue-specific.
4. The sebaceous glands and hair follicles as structural unit are involved in the secretion of th FMD pheromone.

Innovation points

- **Introduction** of the genetic and histological relationship of the skin and musk glands in FMD from omics, molecular biology, immunochemistry and histological anatomy .

- **Summary** of skin and musk gland have strong relationship.

- **Emphasis** of important role of the sebaceous gland in the skin and musk gland pheromone secretion processes of FMD.



Innovation points

A series of comprehensive figures were generated to summarize relationship between skin and musk gland.

Figure 2 | Co-expression gene in the back skin, abdominal skin and musk gland.

Figure 3 | Metascape predictive analysis tool demonstrated that genes expressed in musk glands were skin tissue-specific.

Figure 4 and 5 | GO functional and pathway prediction.

Figure 6 | HE reveals spatial relationships between skin and musk gland.

Figure 7, 8 and 9 | Uncovering the expression and localisation of key regulatory genes in the skin and musk gland.

Figure 10 | Sketching the relationship between the skin and the musk gland in terms of genetic and spatial structure..

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