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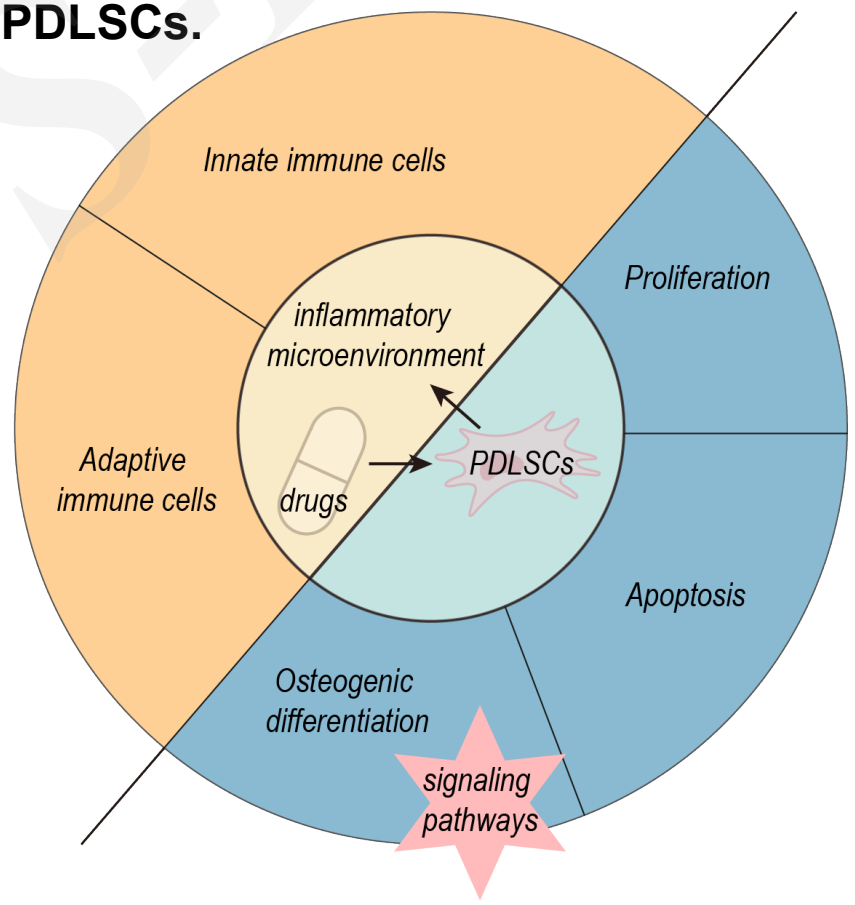
Overview of the main biological mechanisms linked to changes in periodontal ligament stem cells and the inflammatory microenvironment

Key words: Inflammatory microenvironment; Inflammatory regulation; Osteogenic differentiation; Periodontal ligament stem cells; Periodontitis

Research Summary

Cell behavior changes in response to changes in the inflammatory microenvironment. This review mainly focused on the changes on basic biological behavior, osteogenic differentiation, and drug effects caused by the inflammatory microenvironment of PDLSCs.

- **Effect of PDLSCs on the inflammatory microenvironment**
- **Effect of inflammatory microenvironment on PDLSCs**
- **Effect of the drugs on osteogenic differentiation of PDLSCs in inflammatory microenvironment**



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Innovation points

- **This review** focuses on the interaction between PDLSCs and inflammatory microenvironment.

- **Introduction** of the immune response in inflammatory microenvironment affected by PDLSCs and changes in PDLSCs caused by inflammatory microenvironment.

- **Summary** as PDLSCs are ideal stem cells for periodontal tissue regeneration, the delicate balance between the inflammatory microenvironment and PDLSCs play a key role on the effect on improving the therapeutic effect of clinical drugs for periodontitis.

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Innovation points

Comprehensive figure and table were generated to summarize the signaling pathways and effect of drugs on osteogenic differentiation of PDLSCs under inflammatory microenvironment.

Figure 1| The osteogenic signaling pathway of PDLSCs within the inflammatory microenvironment.

Table 1| Summary of the effect of different drugs on the osteogenic differentiation of PDLSCs under inflammatory microenvironment.

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