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Endomitosis: a new cell fate in the cell cycle leading to polyploidy in megakaryocytes and hepatocytes

Key words: Polyploidy; Endomitosis; Megakaryocyte; Hepatocyte; Cell cycle; Tetraploidy checkpoint; Whole-genome doubling

Research summary

This review summarizes the recent research progress in endomitosis and provides novel insights into how cells manipulate mitosis toward endomitosis.

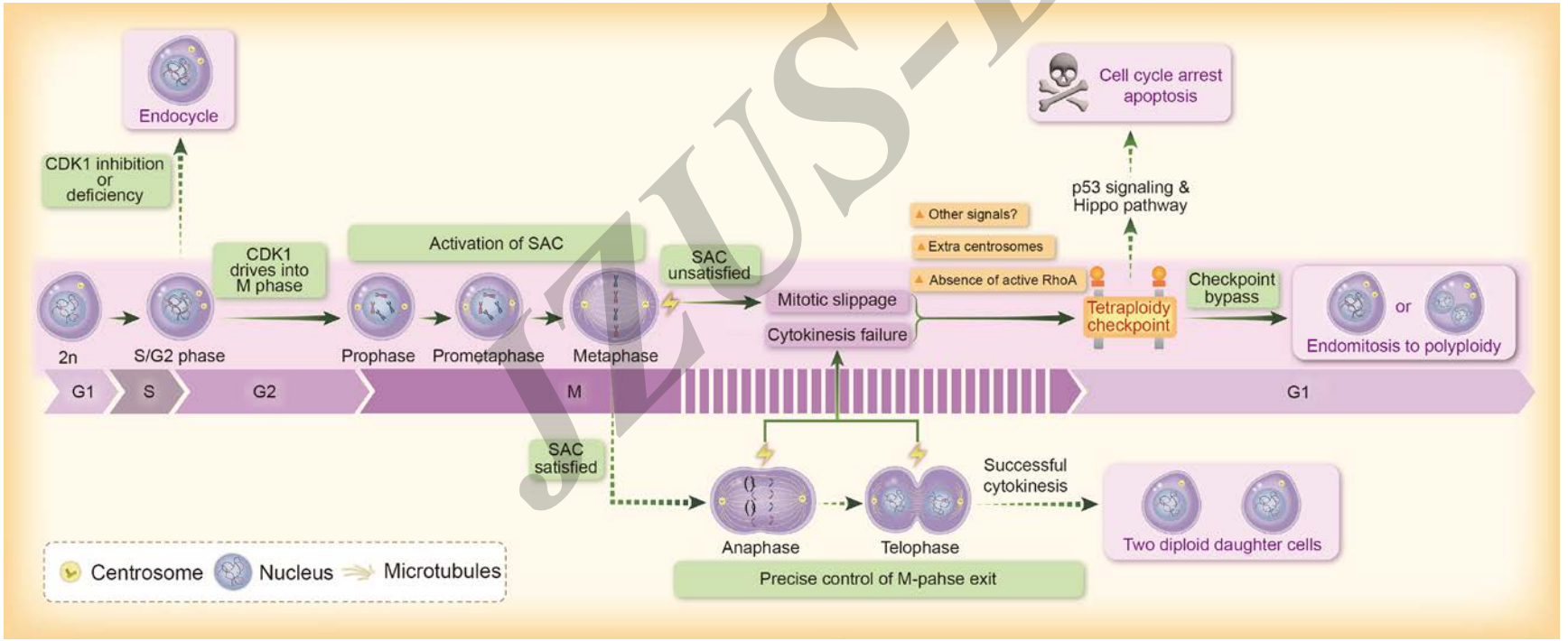

Figure 2

Innovation points

- **Introduction** **of the canonical mechanisms of polyploidization, taking megakaryocytes and hepatocytes as the example.**

- **Summary** **of the mechanisms rewiring mitosis towards endomitosis for polyploidization in megakaryocytes and hepatocytes.**

- **Highlight** **that endomitosis is a new cell fate in the cell cycle, and tetraploidy is a critical stage at the bifurcation of cell fate decision.**

Innovation points

The immunofluorescence images directly illustrate the differences in nucleation between endomitotic megakaryocytes and hepatocytes.

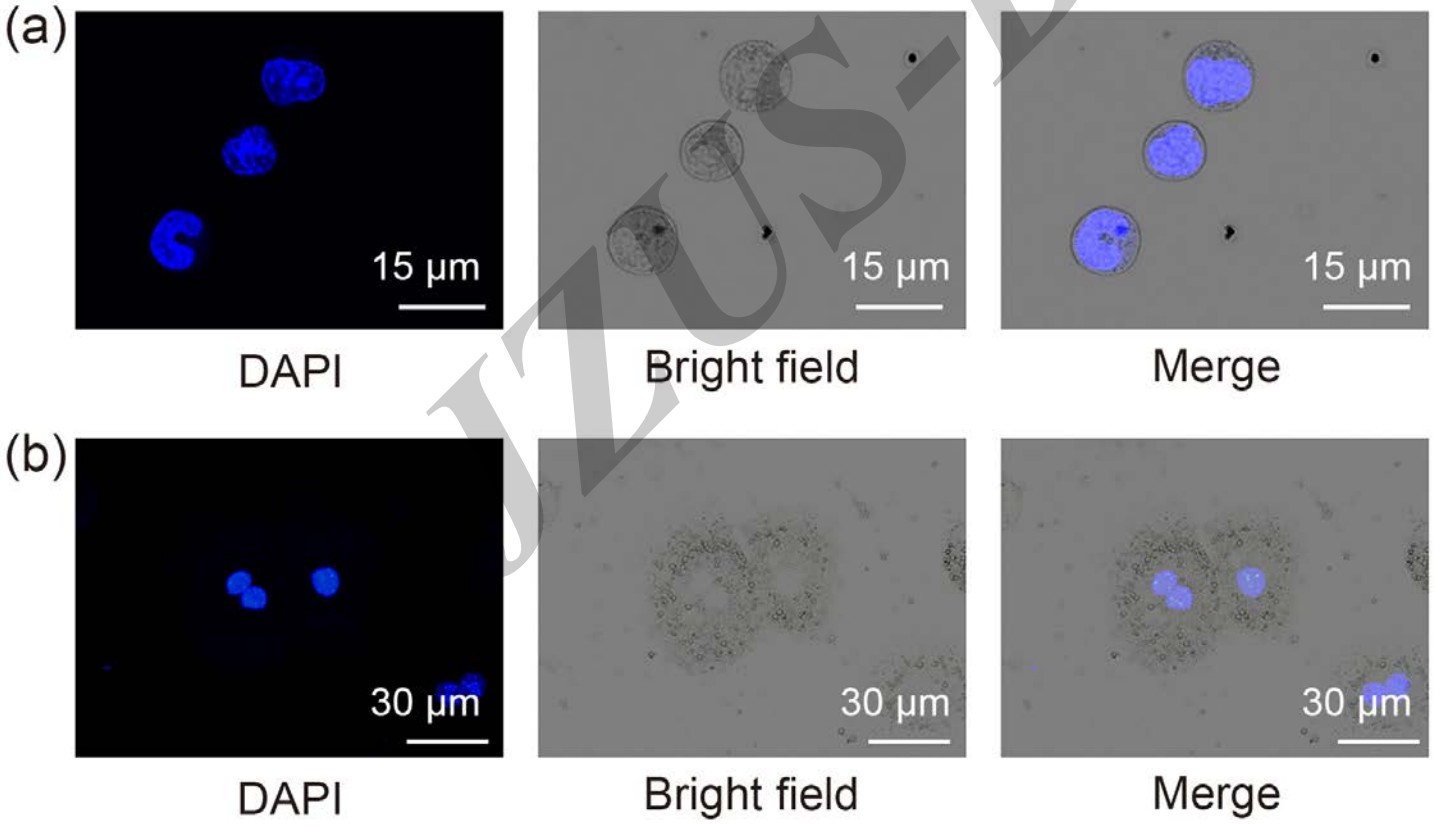

Figure 1