

# Prospect of CSC-targeting Therapy

Kyoto Univ.

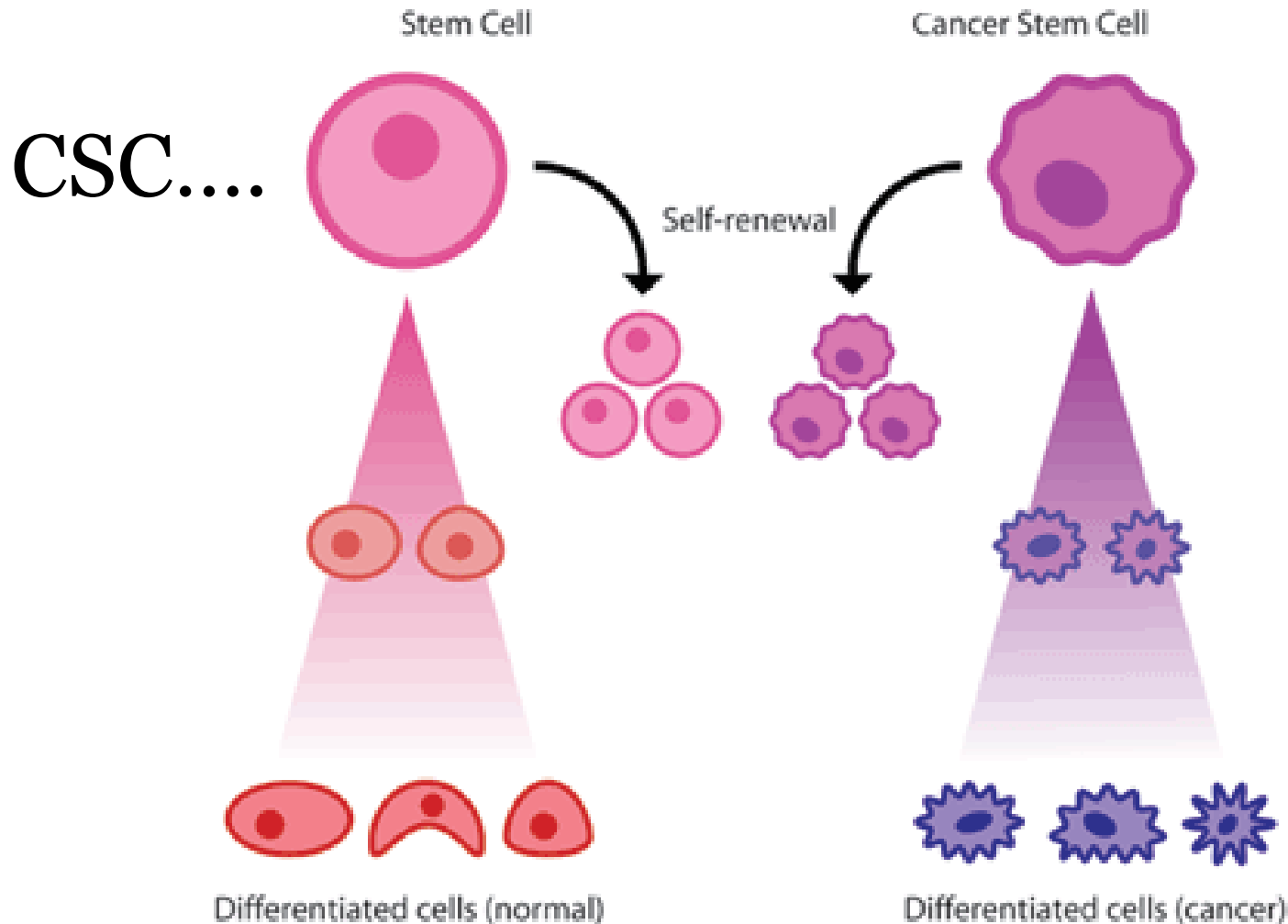
Faculty of Medicine (1)

Seigi Oshima

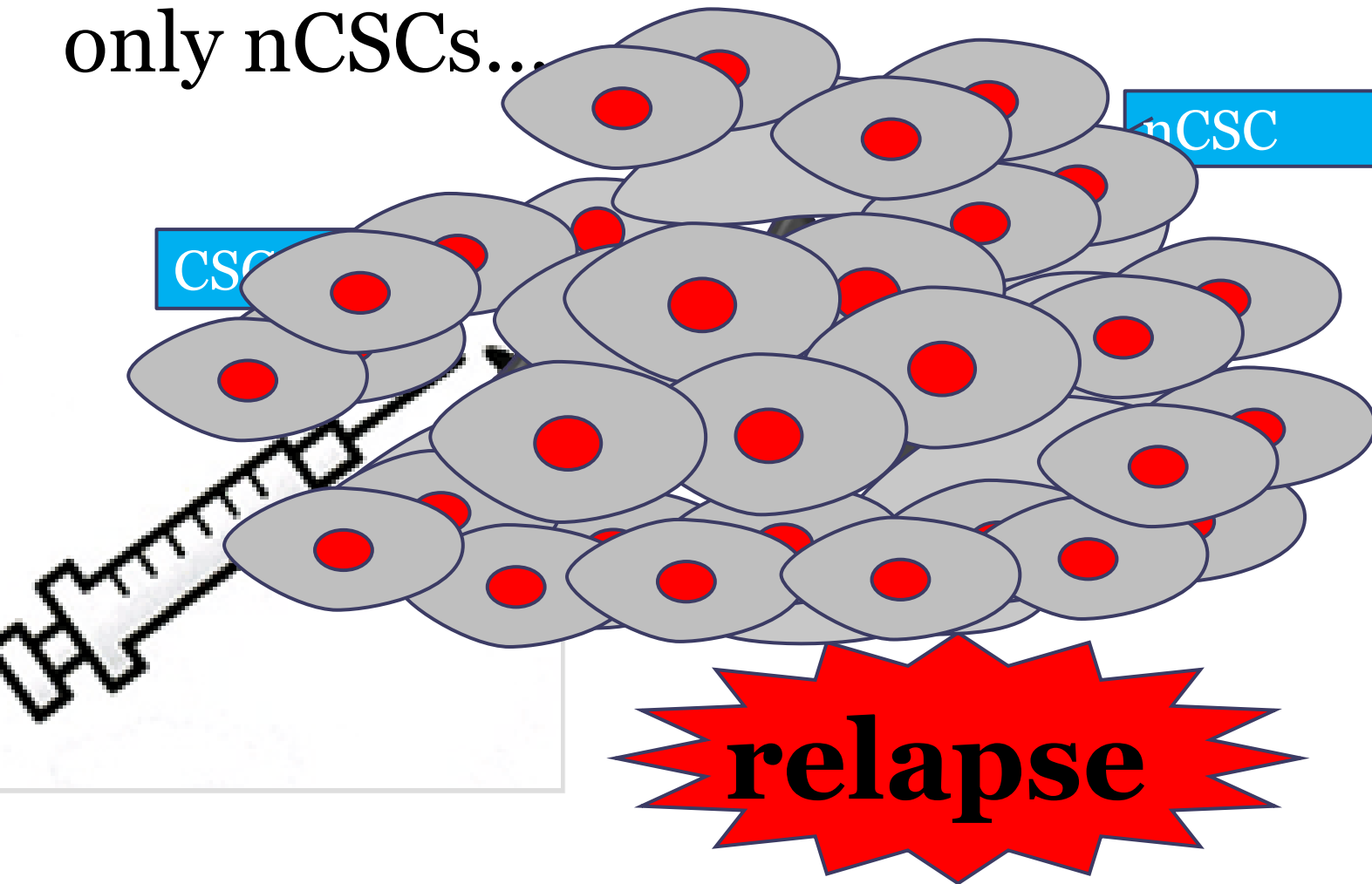
# Outline

1. Cancer stem cells (CSCs)
2. Previous studies on CSC-targeting therapy
3. My suggestion on the novel therapy
4. Conclusion

# What's a Cancer Stem Cell (CSC)?




Normal anticancer drugs target  
only nCSCs...



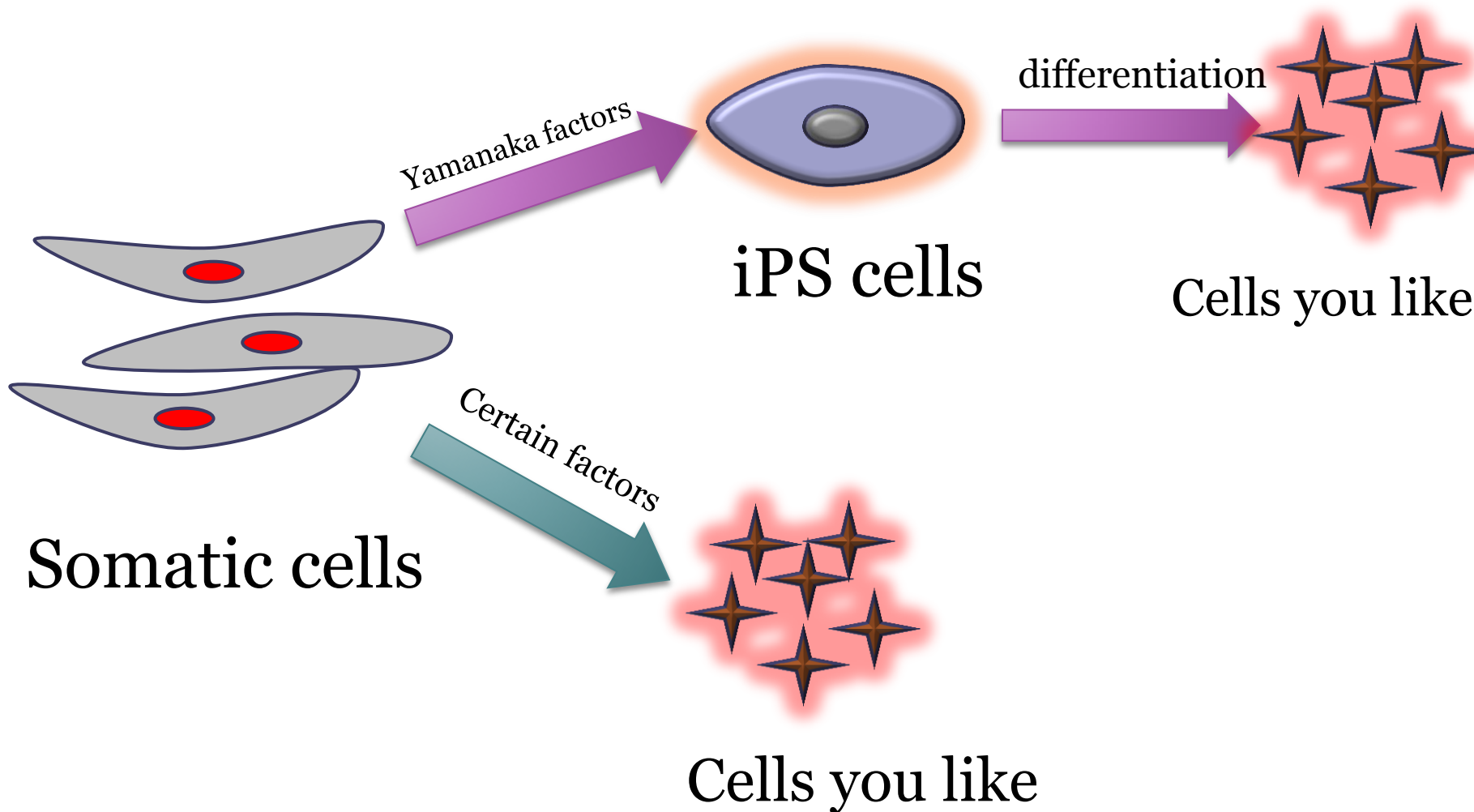
# CSC-targeting Therapy

1. Differentiation therapy
2. CSC niche targeting therapy
3. Direct reprogramming



What's direct  
reprogramming?

# What's Direct Reprogramming?



# Previous Studies

Oncogene (2012), 1–12

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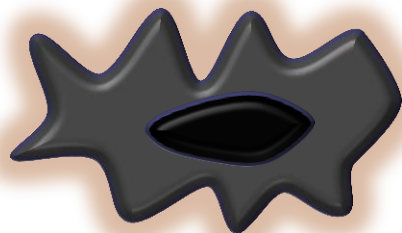
[www.nature.com/onc](http://www.nature.com/onc)



## ORIGINAL ARTICLE

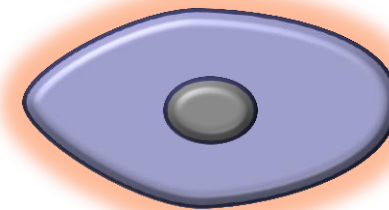
Terminal differentiation and loss of tumorigenicity of human cancers via pluripotency-based reprogramming

X Zhang, FD Cruz, M Terry, F Remotti and I Matushansky



Cancer cells

Yamanaka factors



iPS cells

Spotlight



## iPSCs from cancer cells: challenges and opportunities

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**Review Article**

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## **Emerging Methods for Preparing iPS Cells**

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Naotsugu Haraguchi<sup>1,2</sup>, Hideshi Ishii<sup>1,2</sup>, Yuichiro Doki<sup>1</sup> and Masaki Mori<sup>1</sup>**

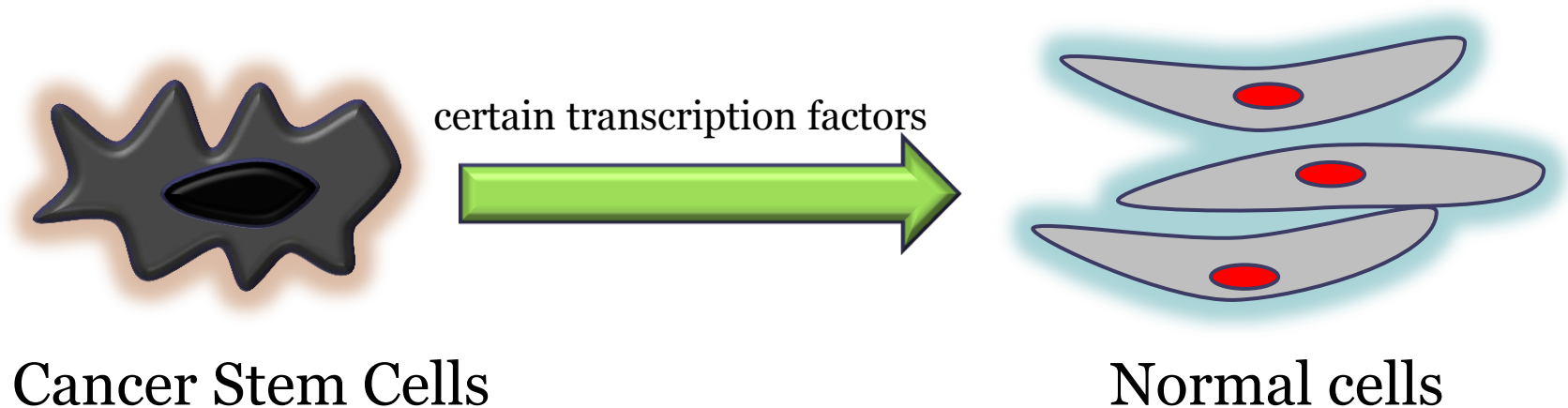
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# Suggestion

- If direct reprogramming can be applied to CSCs, then this method is **novel cancer treatment**.



# Hurdles toward my suggestion

1. Possibility of developing cancer
2. Extraction of pure CSCs from tumors
3. Drug delivery system

# The Future Prospect

- CSC markers

Drug  
Screening

Discovery of  
CSC-targeting  
drug

**Victory over  
cancer**

A diagram illustrating a research pathway. It begins with a list of 'CSC markers' on the left. An arrow points to 'Drug Screening', which in turn points to 'Discovery of CSC-targeting drug'. This final step points into a large, red, starburst-shaped graphic that contains the text 'Victory over cancer'.

**Thank you for your attention!**