

Prêmio de Incentivo em Ciência e Tecnologia para o SUS - 2009

Successful scale-up of human embryonic stem cell production in a stirred microcarrier culture system

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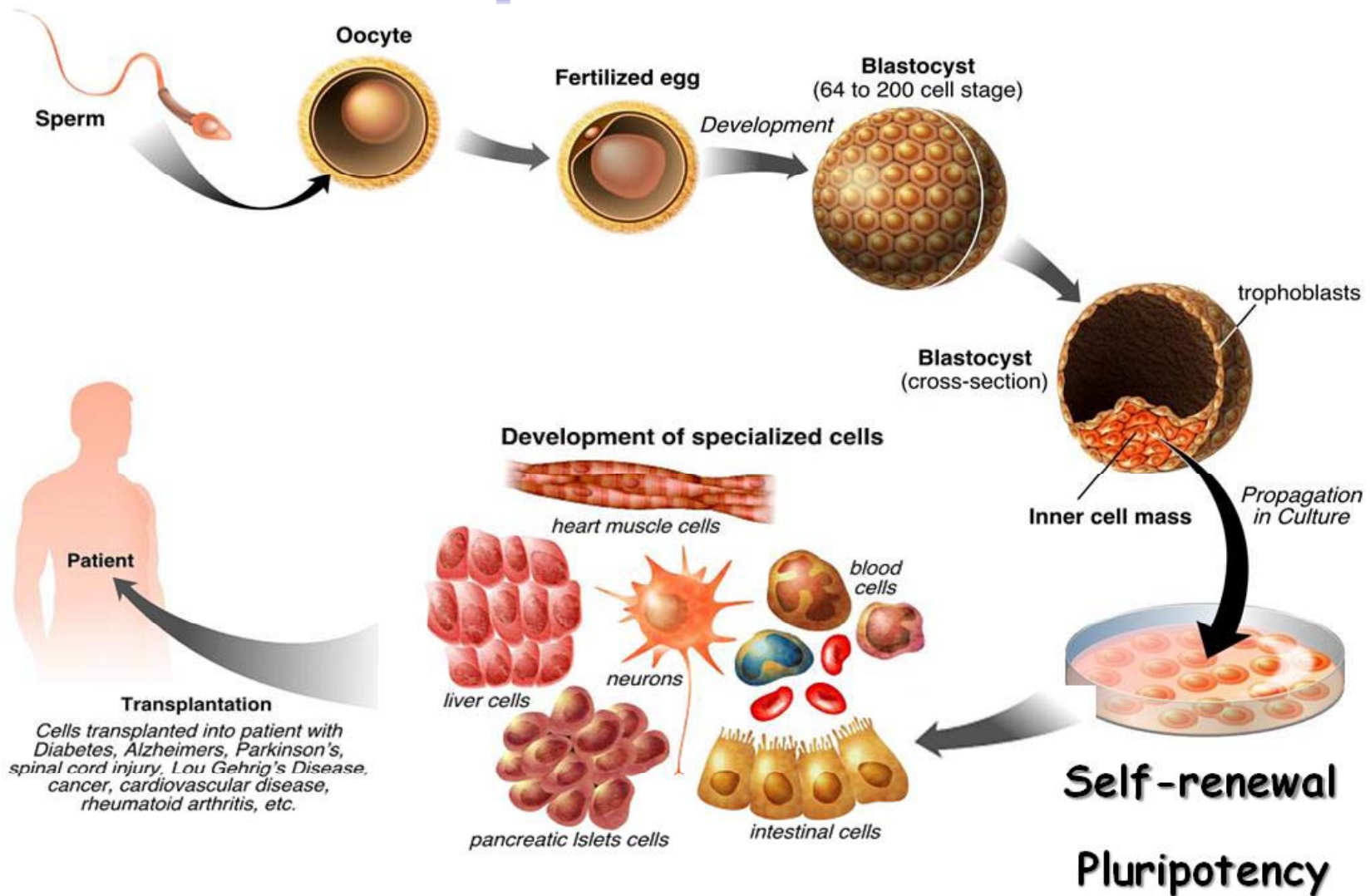
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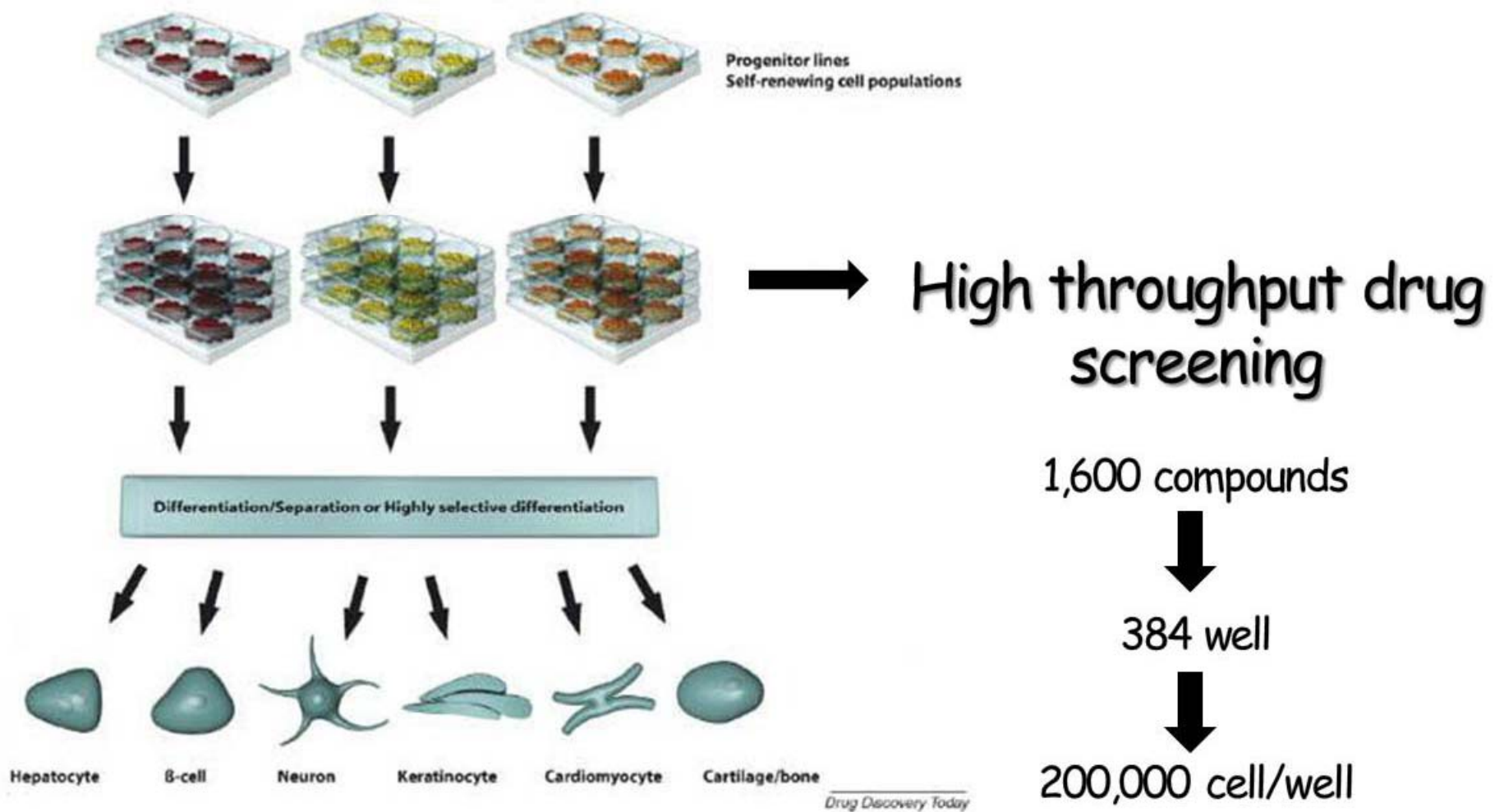
Secretaria de Ciência, Tecnologia e Insumos Estratégicos | Ministério da Saúde



Applications

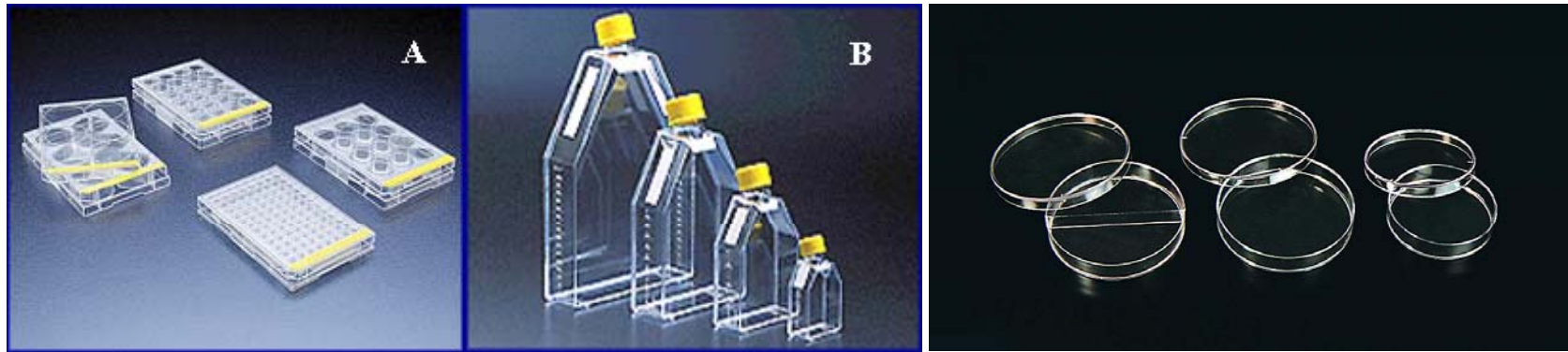


70 milhões de células por paciente



80 milhões de células

Placas estáticas para cultura celular



- Ambiente heterogêneo,
- 5×10^5 cells/cm²,
- área superficial limitada (passagem rotineira),

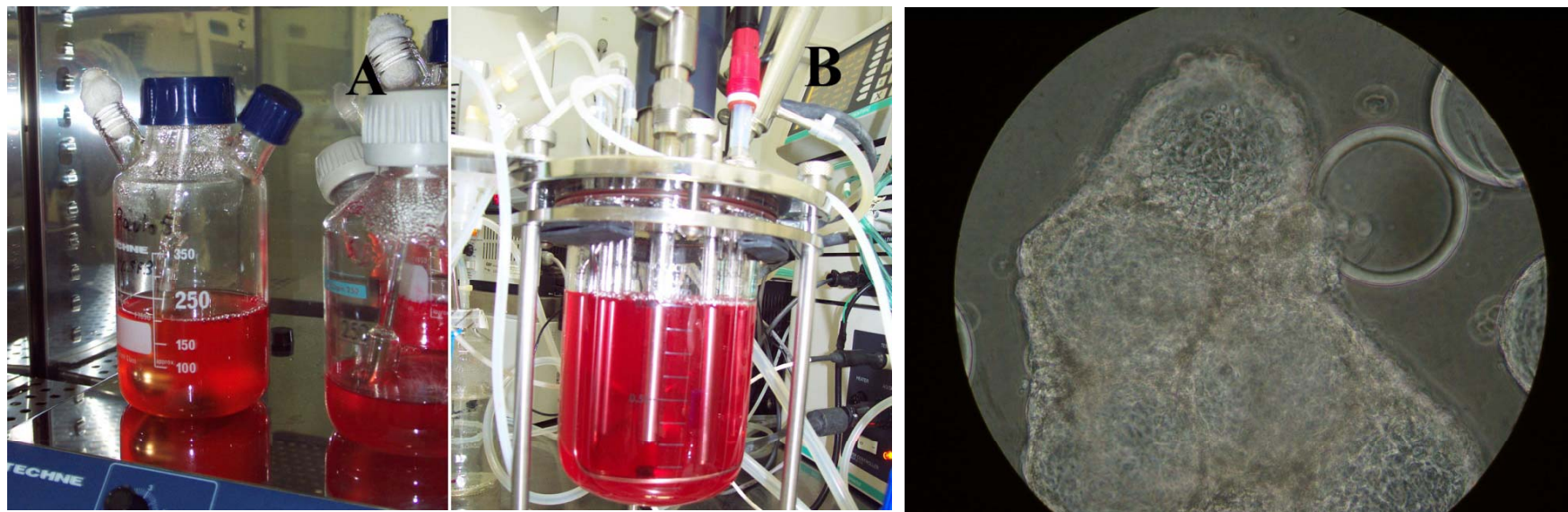
Teste clínico com 100 pacientes

1,000 placas seriam necessárias

Suscetível a
contaminação e
grande
variabilidade

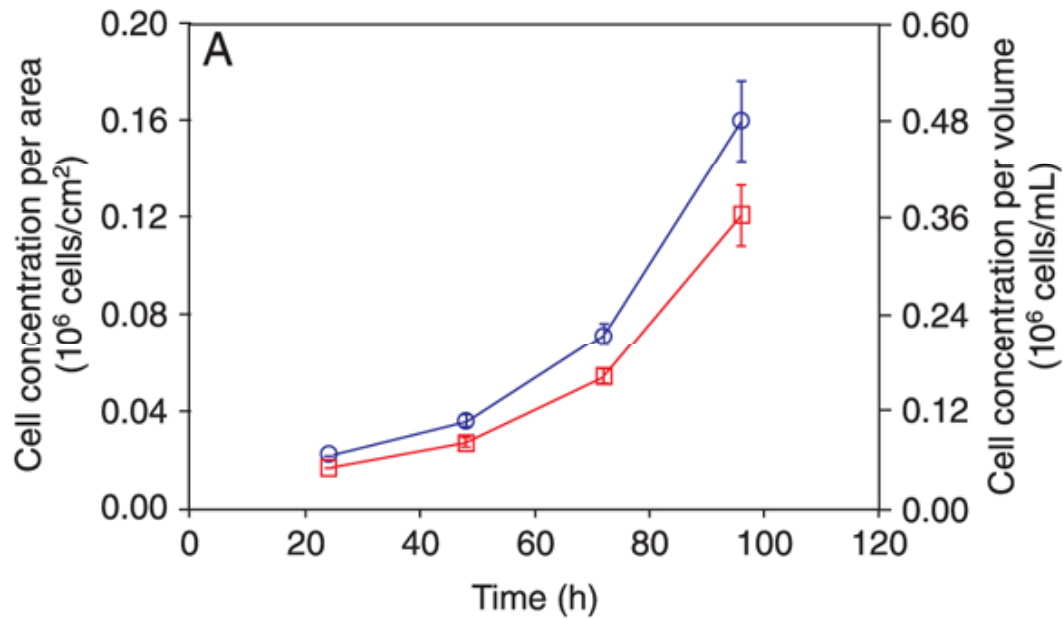


Biorreatores agitados com microcarregadores

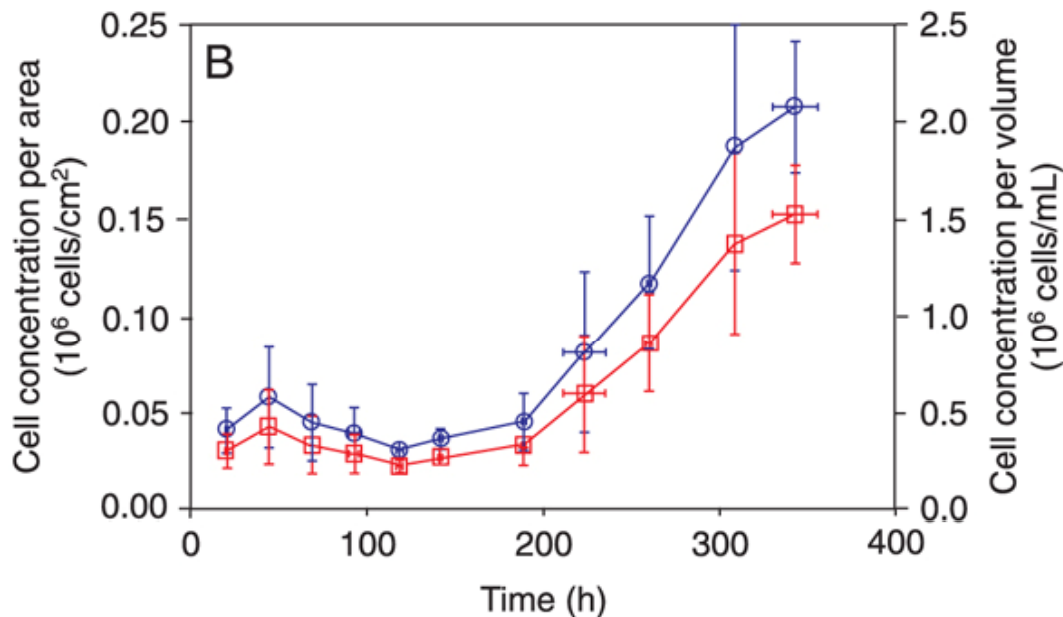


- Homogêneo,
- $1-4 \times 10^6$ cells/mL,
- Passível de automação,
- Fácil de escalar.

Funciona?



○ Cell concentration per area □ per volume of medium



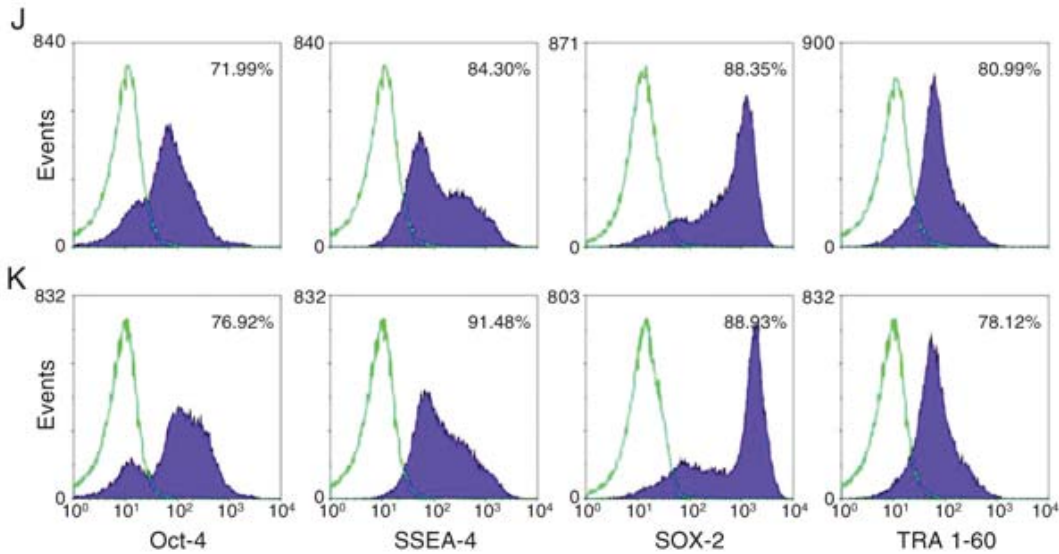
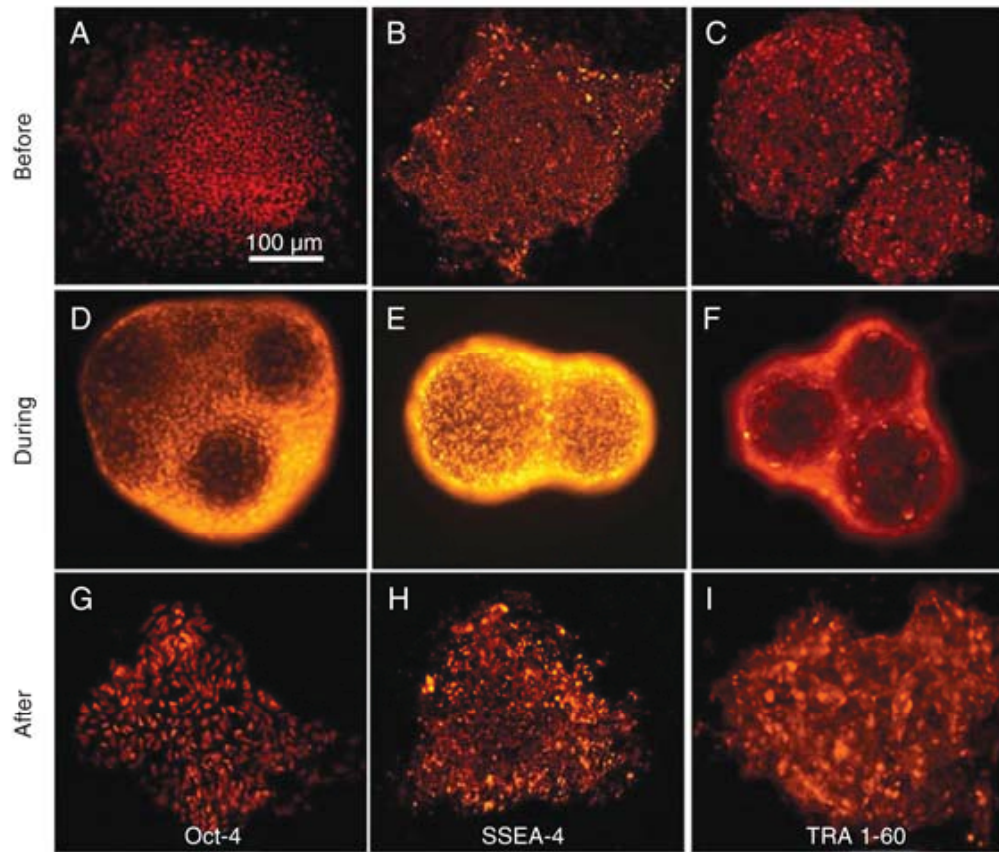
○ Cell concentration per area □ per volume of medium

- 68 vezes
mais células

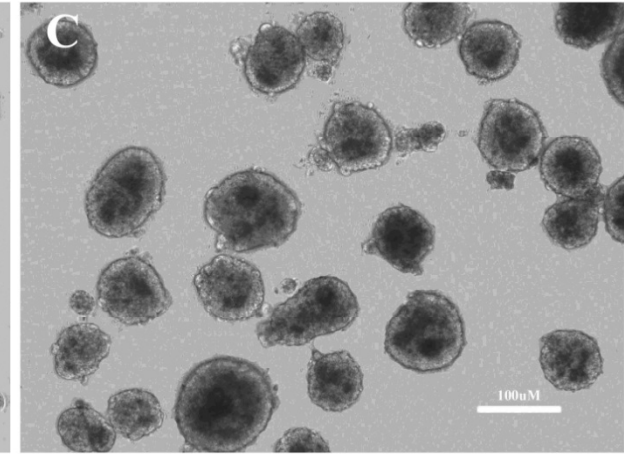
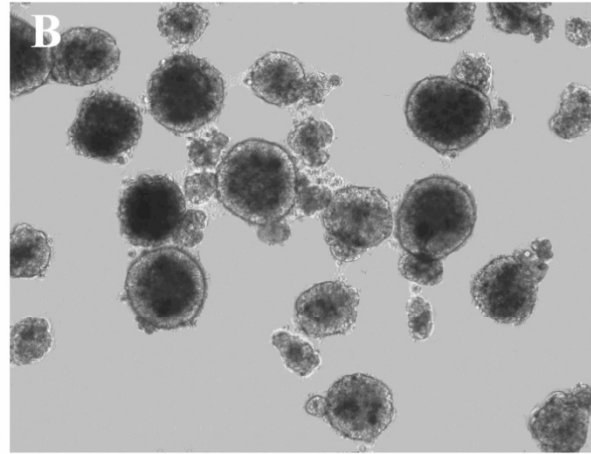
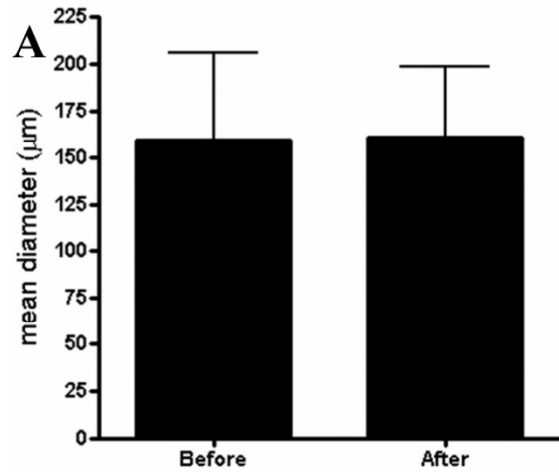
- 4 vezes
maior conc.
celular final

- 50% dos
custos

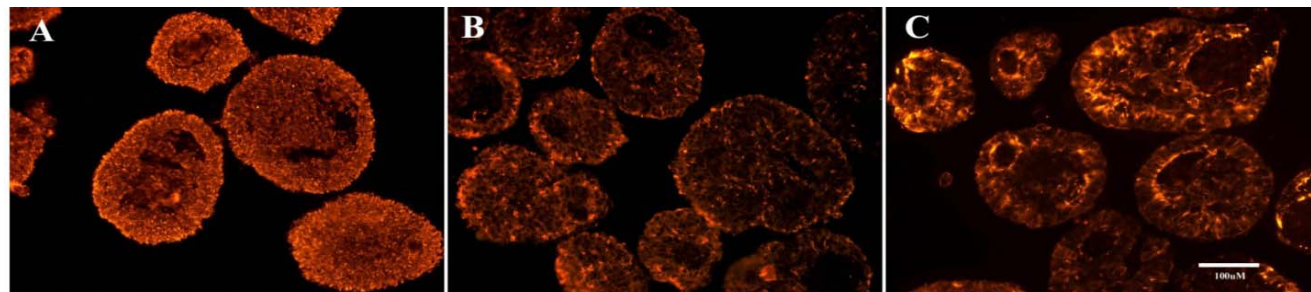
Pluripot. mantida



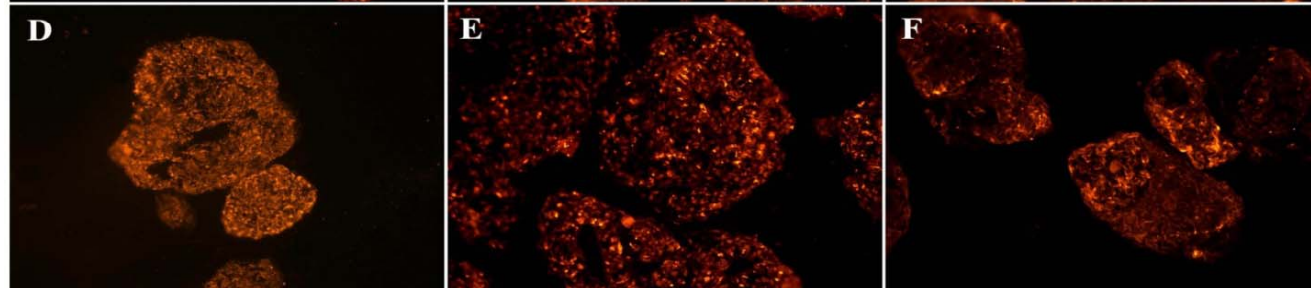
Capacidade de se diferenciar



Cultivo tradicional



Biorreatores



AFP

α -SMA

Nestin

Agradecimentos

