



LatticeBiologics

Natural & Regenerative Tissue Solutions

APTAMER TECHNOLOGY:

*The key to unlocking advanced healing
through true personalized medicine.*

APTAMER TECHNOLOGY - OUTSIDE THE U.S.

Our strategy for developing novel, patentable stem-cell applicable technology:

1

Develop multicolor chimeric aptamer beacons for detecting cellular metabolites.

3

Apply the technology to test the effect of nutrients and growth factors on autologous stem cell growth media.

2

Patent the technology as a method of formulating and optimizing growth conditions for stem cells.

4

Continually refine the R & D process, develop intellectual property, and contribute to the emerging markets of personalized medicine.

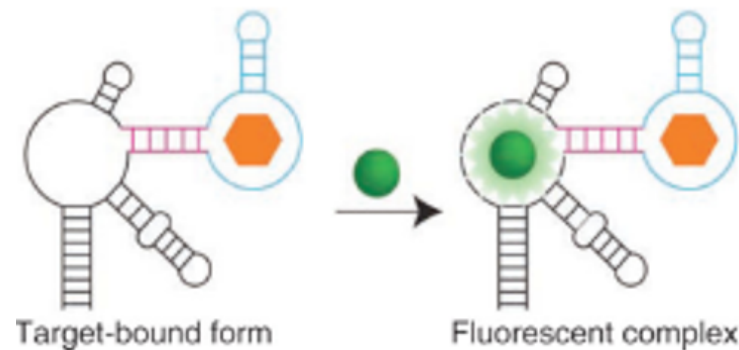
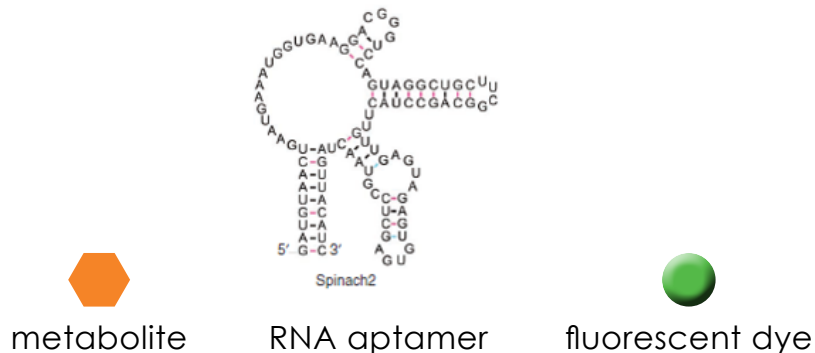
APTAMER TECHNOLOGY

1

Develop multicolor chimeric aptamer beacons for detecting cellular metabolites.

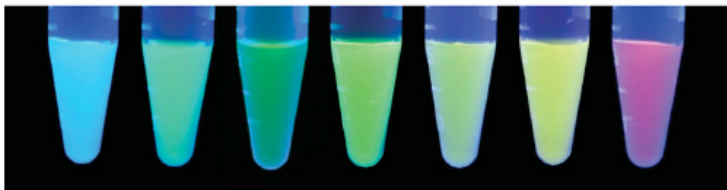
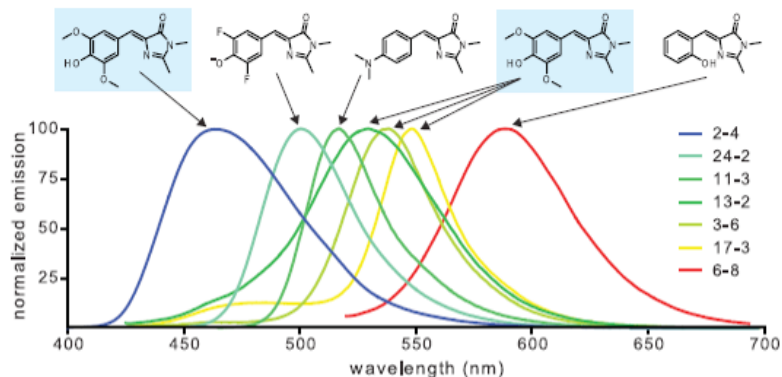
Detection and Analysis:

- Chimeric aptamers recognize specific metabolites and fluoresces upon binding.
- Utilizing different colors for related metabolites enables their color signal ratios to be simultaneously measured and stem cell status to be determined.



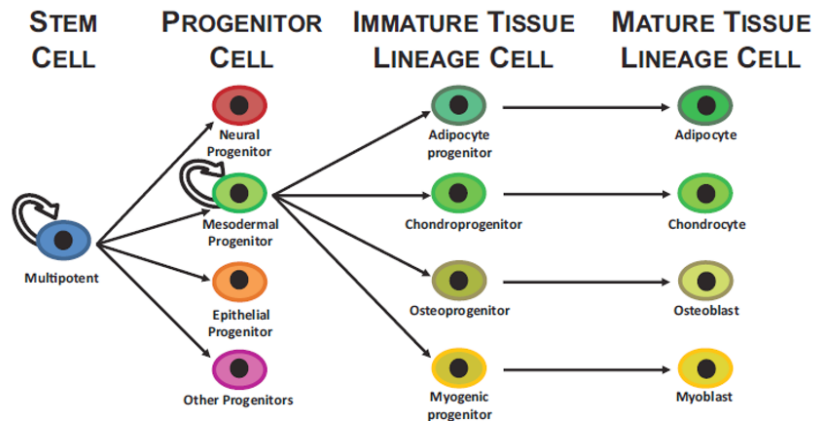
2

Patent the technology as a method of formulating and optimizing growth conditions for stem cells.



Increasing Cell Viability:

- The pattern assessed by multiple metabolite ratios guides the optimization of growth conditions needed to render the stem cells ready for transplantation (develop viability).



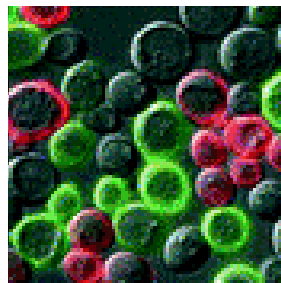
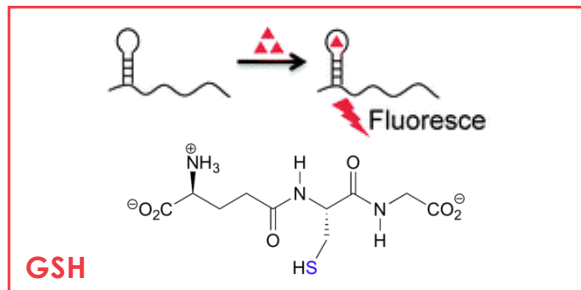
APTAMER TECHNOLOGY

3

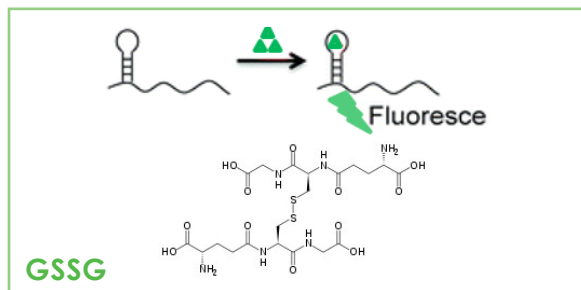
Apply the technology to test the effect of nutrients and growth factors on autologous stem cell growth media.

Example: Determining redox status of the cells.

Method: Measure the metabolites of oxidized reduced glutathione (GSH) and its oxidized form, glutathione disulfide (GSSG).



Alter nutrient composition of media to favor differentiation to bone tissue, e.g. + Vitamin C



- High reductive status (\uparrow GSH/GSSG \downarrow) correlates with proliferation of undifferentiated stem cells.
- High oxidative status (\downarrow GSH/GSSG \uparrow) favors differentiation.