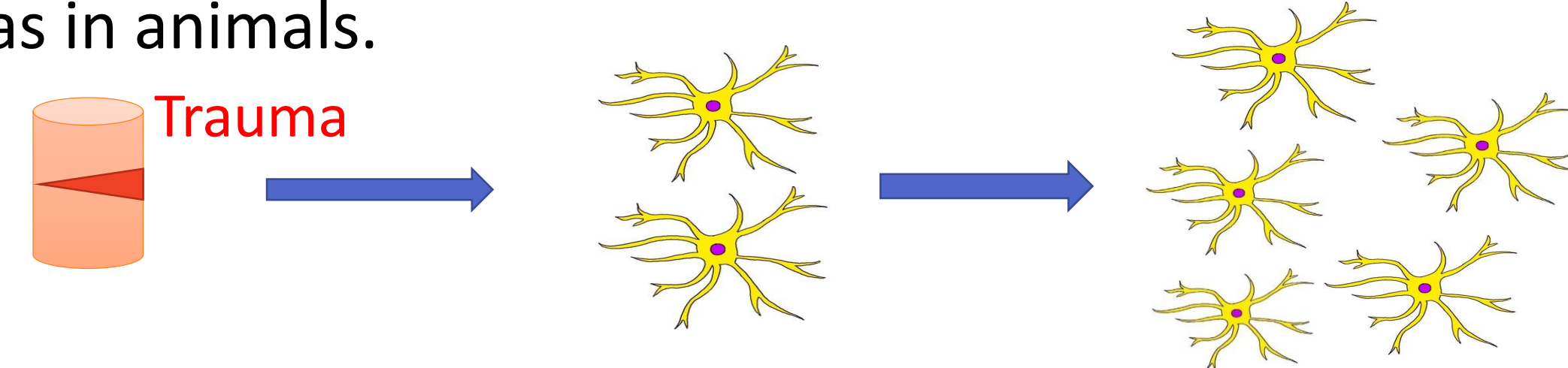


Predicting the inflammatory response post spinal cord injury in humans

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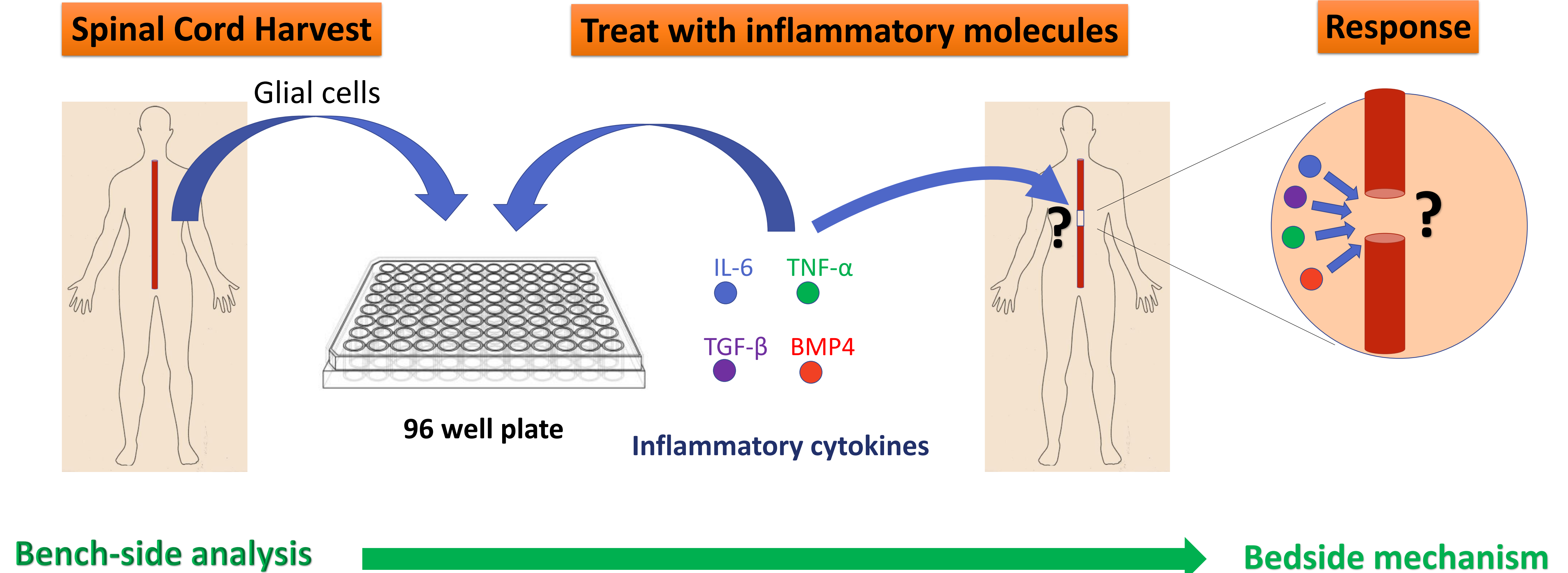
Introduction

Spinal cord injury (SCI) is a devastating disease which may cause permanent damage to motor and sensory function. **Inflammatory cytokines** are released post-trauma which regulate many other mechanisms in response. **Glial scarring** is formed in response to the inflammatory conditions and consists of reactive astrocytes which impede regeneration. In humans, it is unclear whether glial scar formation occurs by the same mechanisms as in animals.

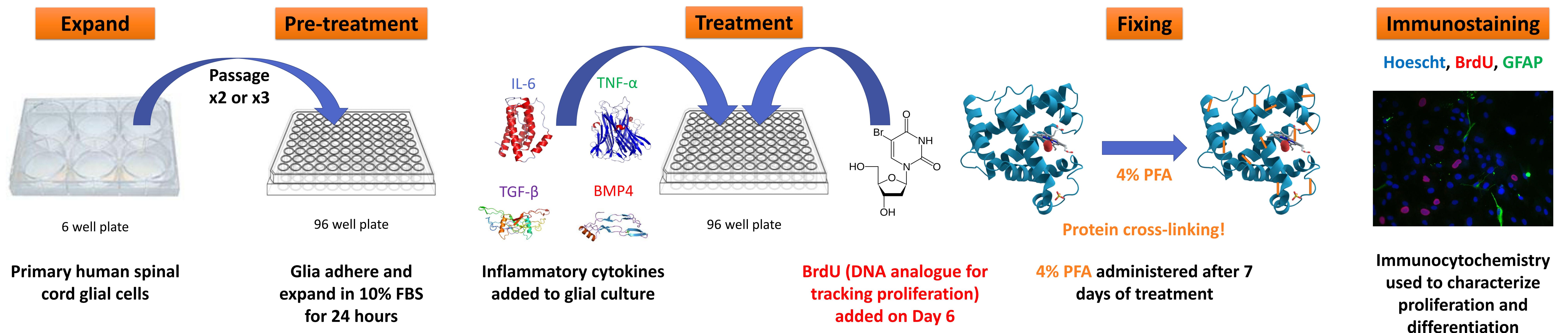


Objective: Assess the inflammatory response of human spinal cord glial cells *in vitro*.
Hypothesis: Human glia will upregulate reactive astrocyte formation and astrogliosis in response to inflammatory cytokines.

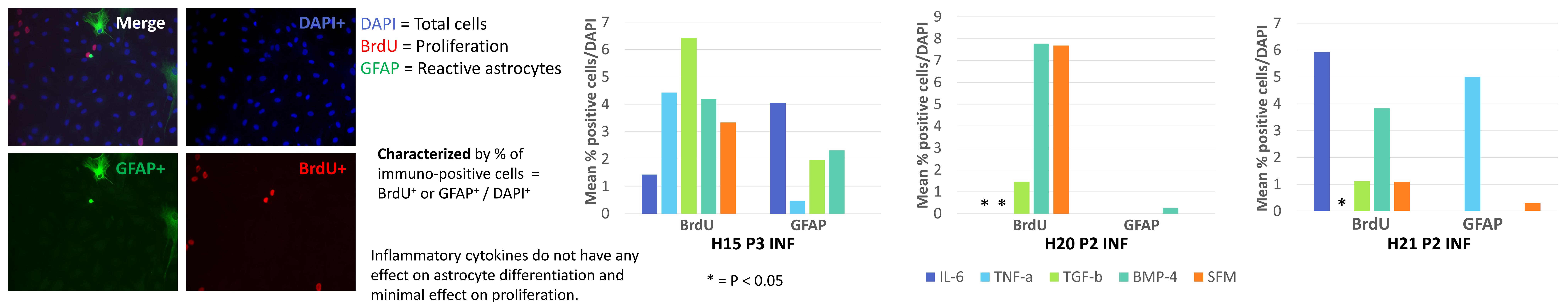
Overview



Methods



Results



Conclusions

No consistent effect of inflammatory molecules on the proliferation and differentiation of human spinal cord glia

- TNF- α , IL-6 and TGF β could increase or decrease proliferation and reactive astrocyte differentiation.
- Inconsistency may stem from (1) individual human differences and (2) using a heterogenous glial population

Future Directions

Further experiment ideas:

- Replicate experiment using cultures derived from higher passage number to obtain an initial homogenous astrocyte population
- Determine the inflammatory effect of multiple cytokines in combination on human glia

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