

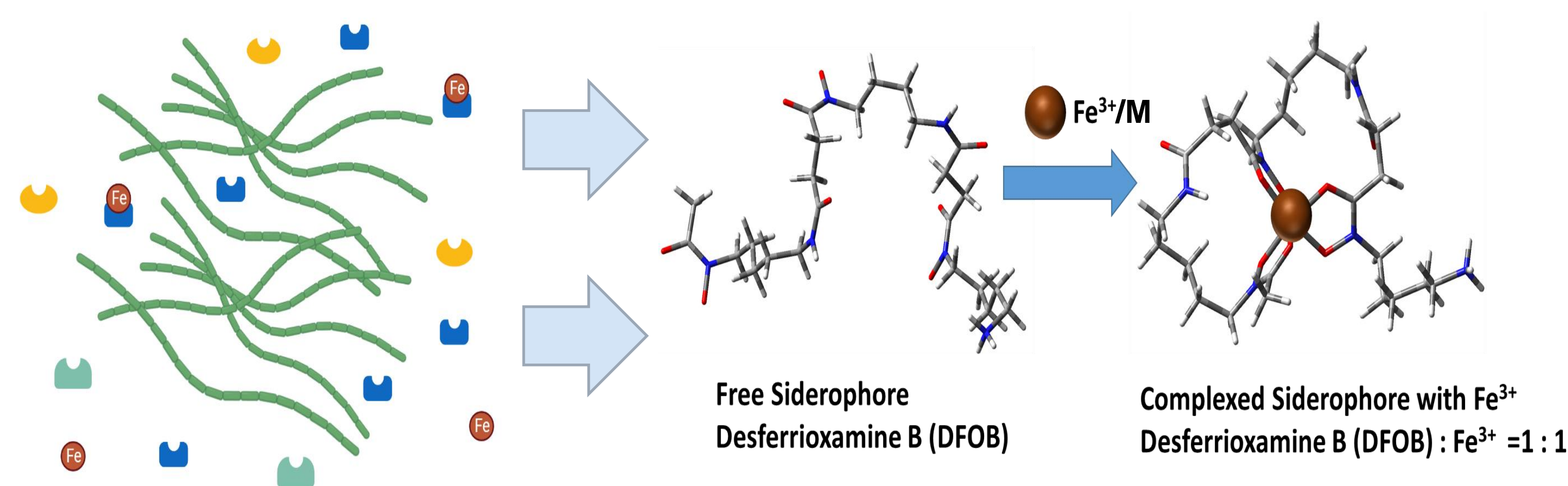
Cost effective production of siderophores by genetic manipulation for metal recovery

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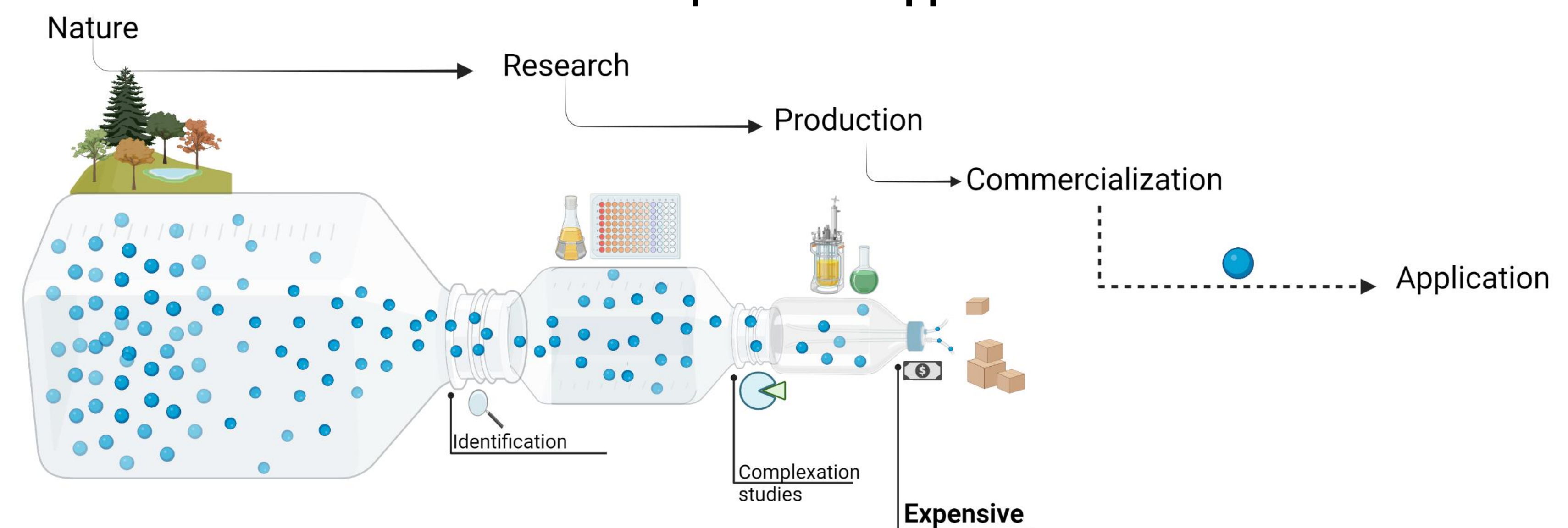
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Introduction

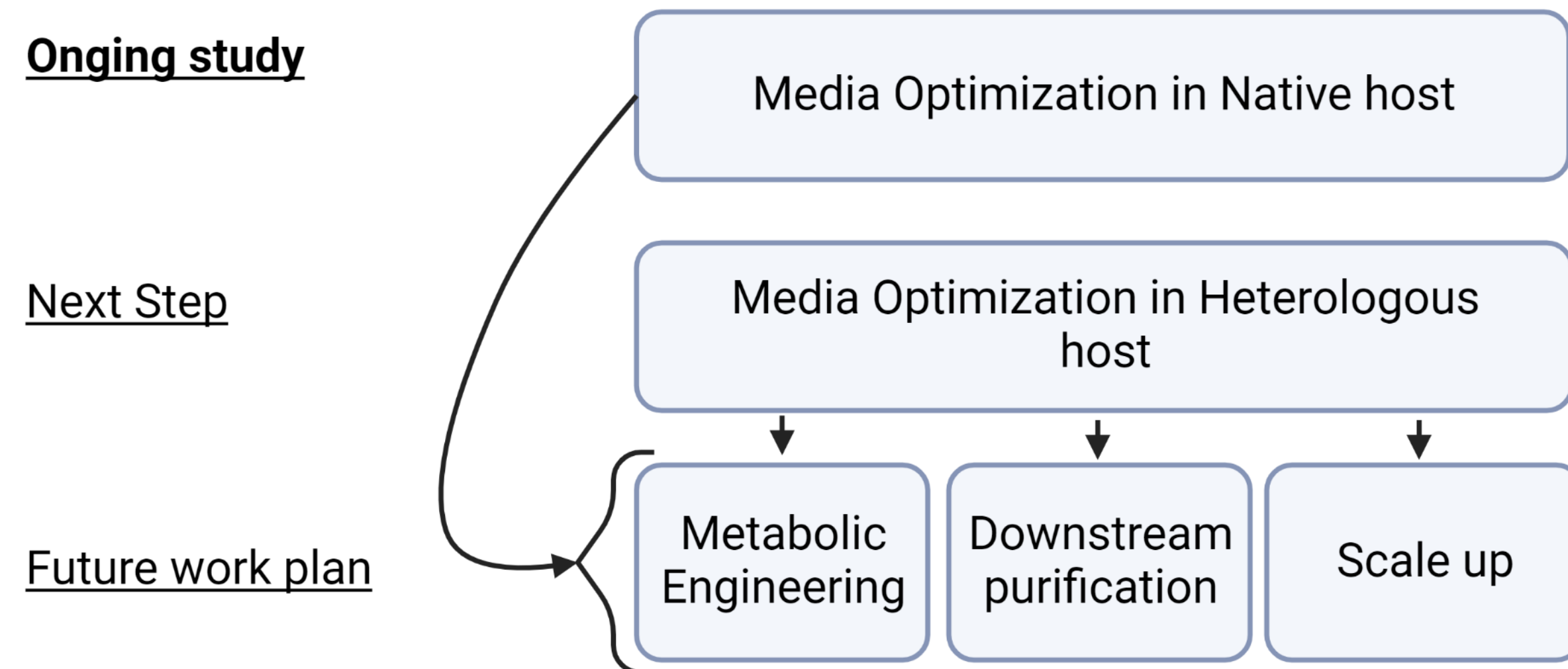
Siderophore secretion by bacteria for capturing Fe³⁺



Limitation of Siderophores in Application

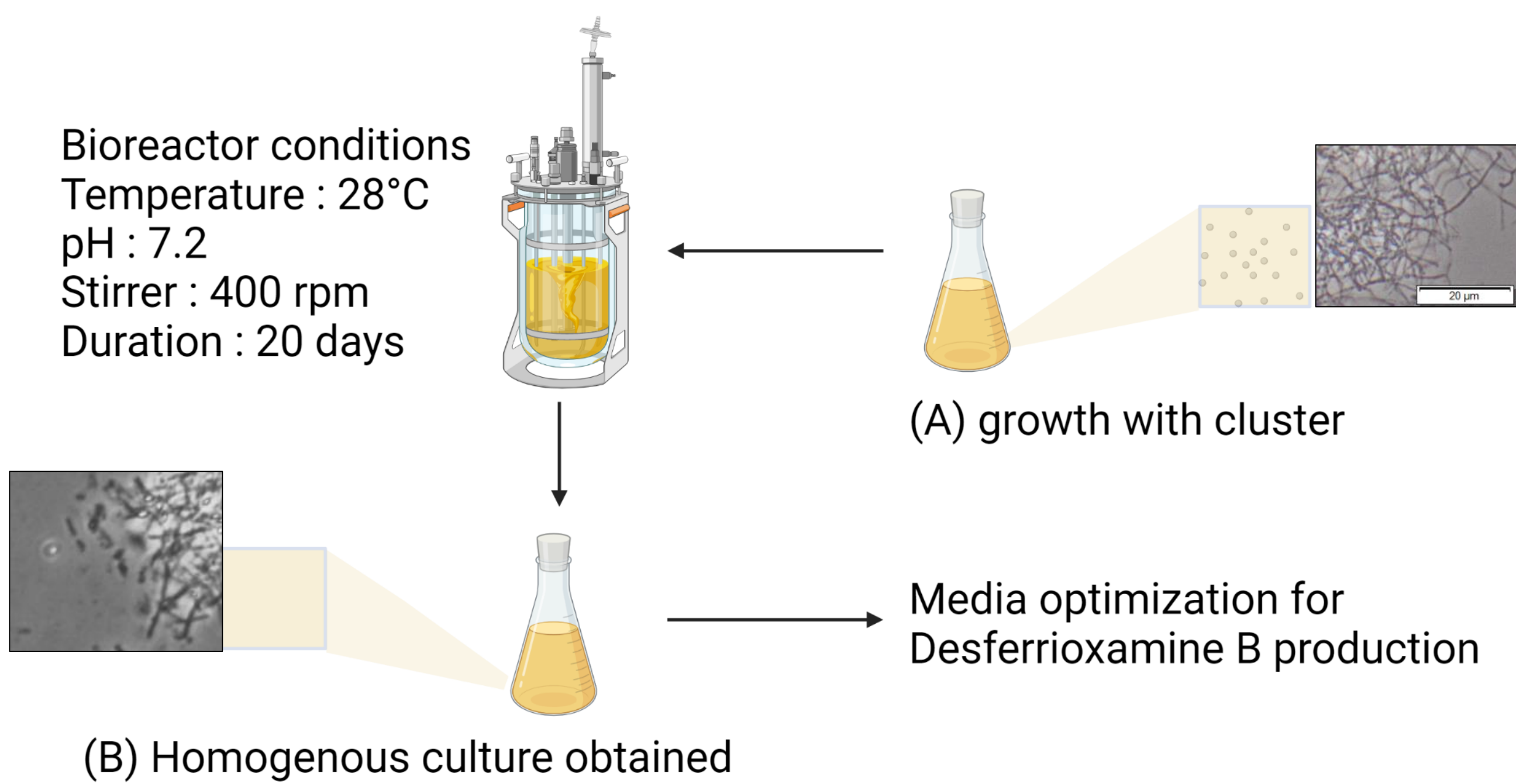


Methodology

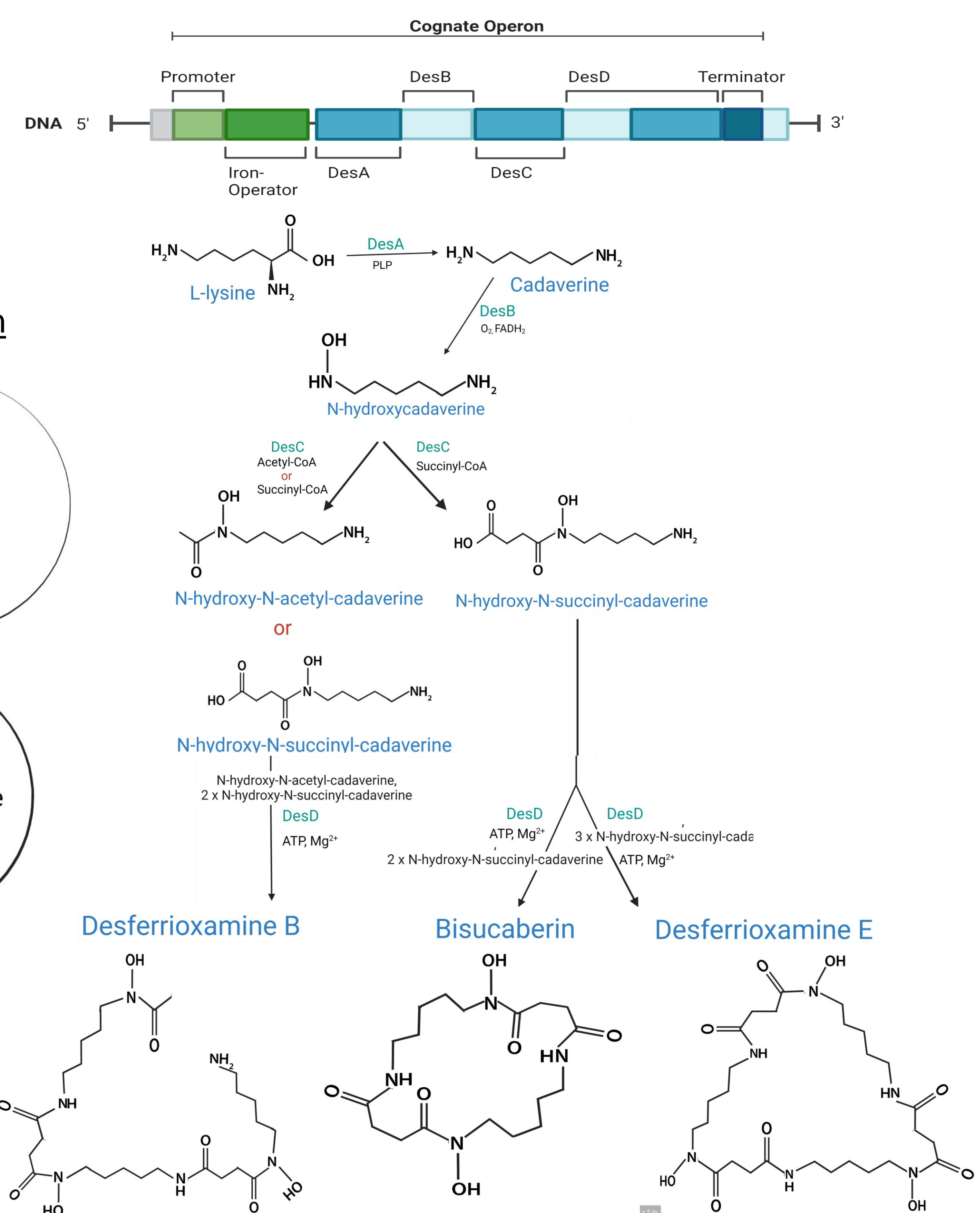
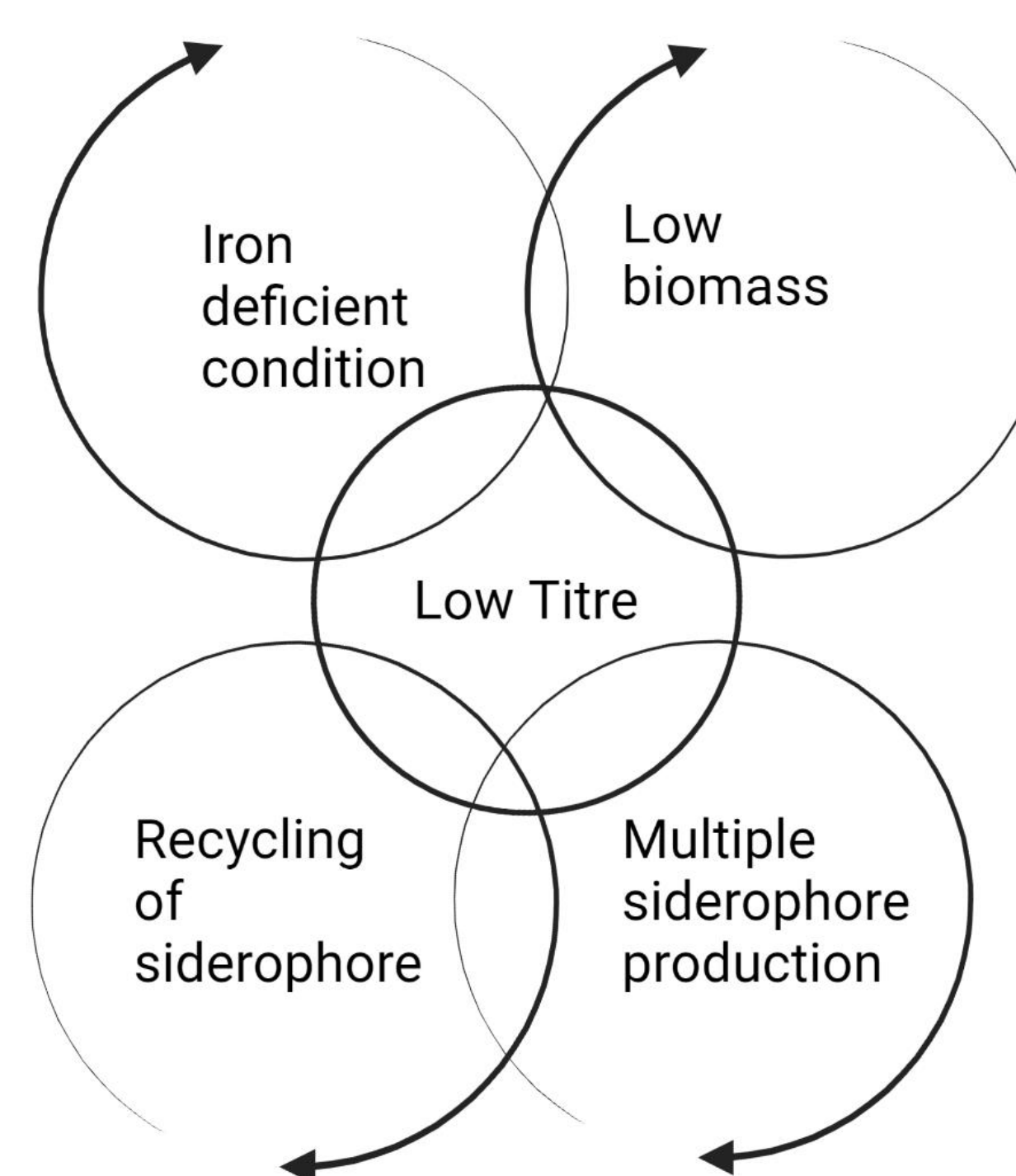


Media Optimization in native host: *Streptomyces pilosus* for Desferrioxamine B production

Inoculum preparation for media optimization in Minimal media 9

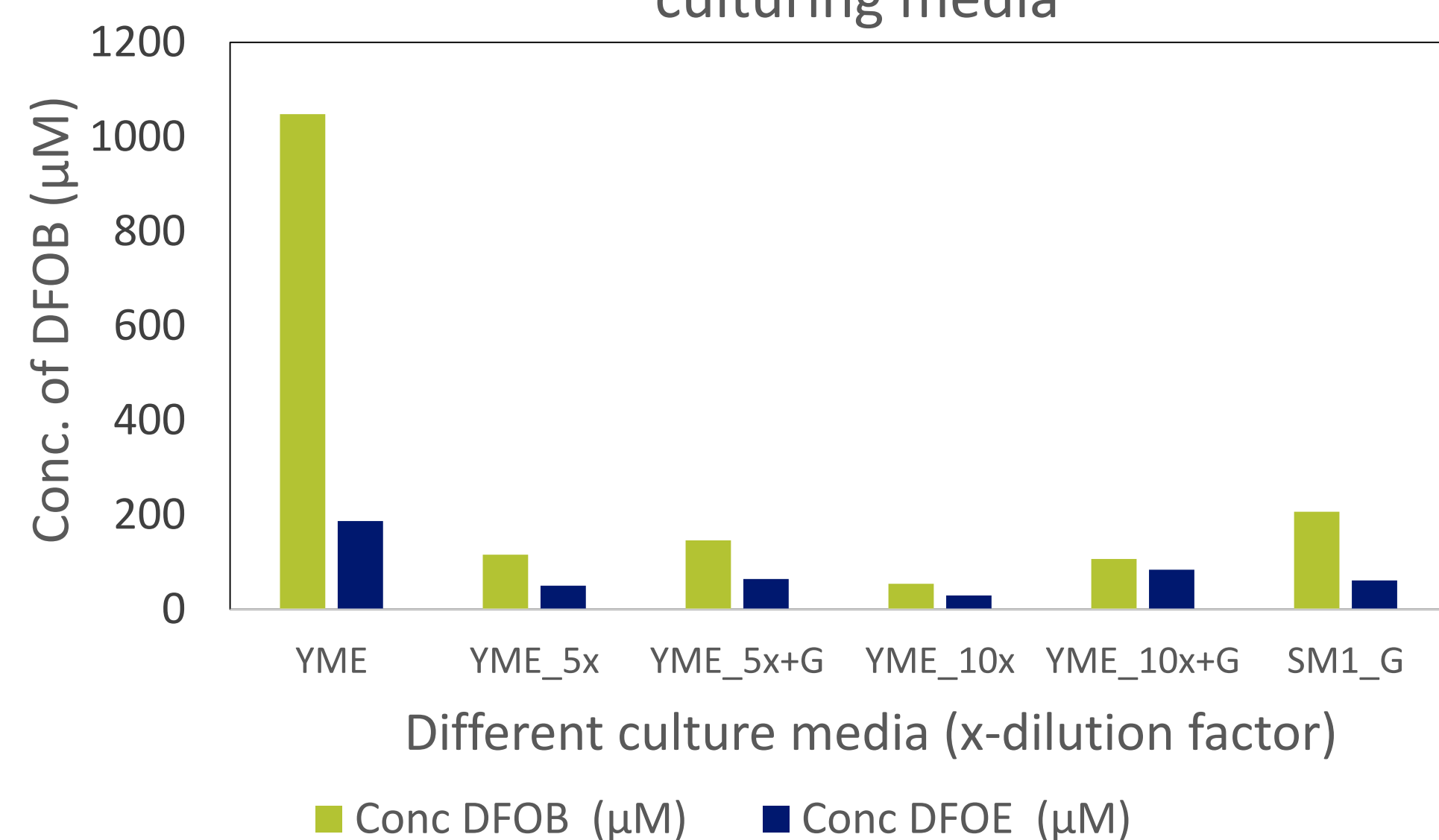


Factors affecting the siderophore production

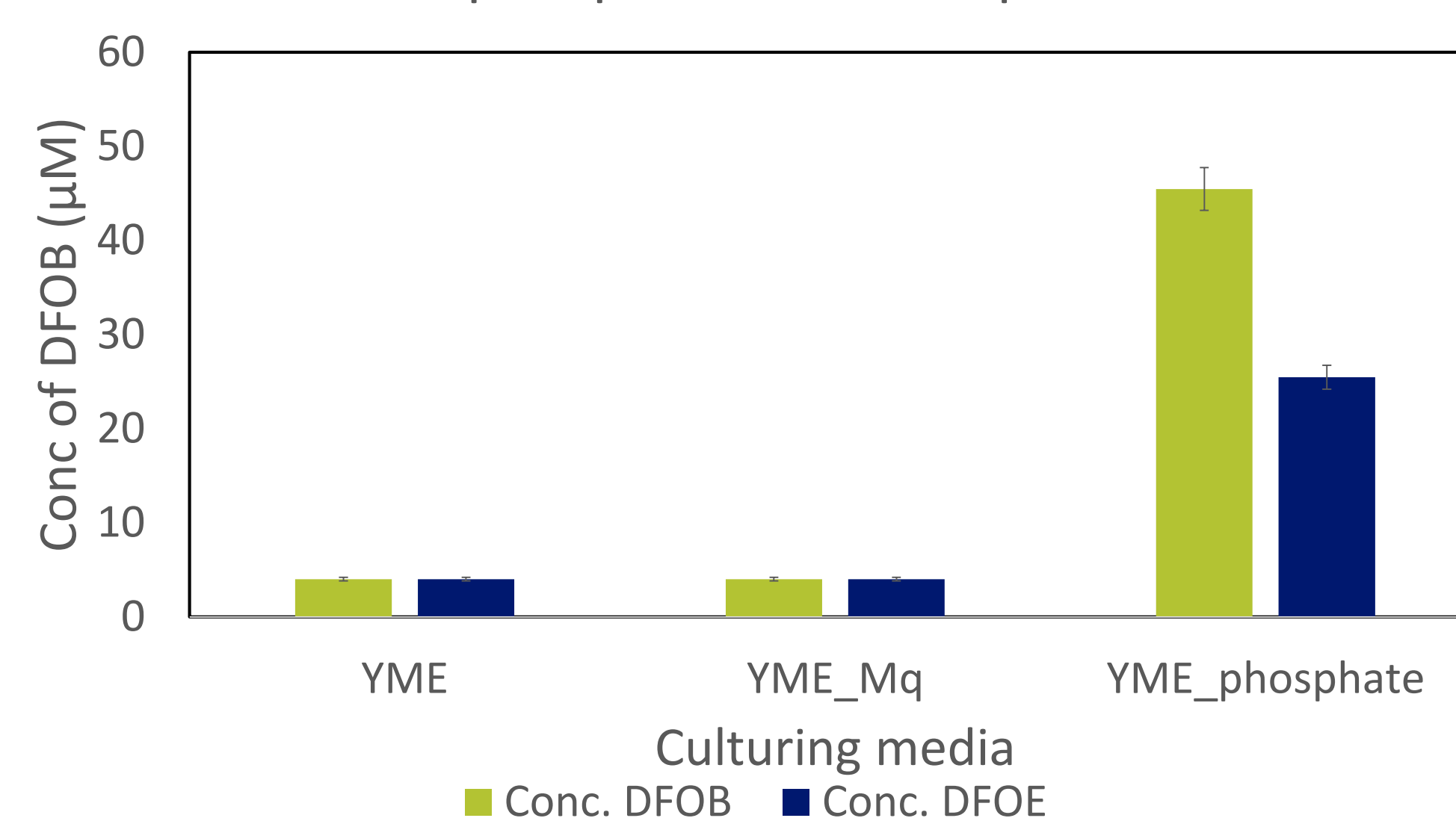


Results

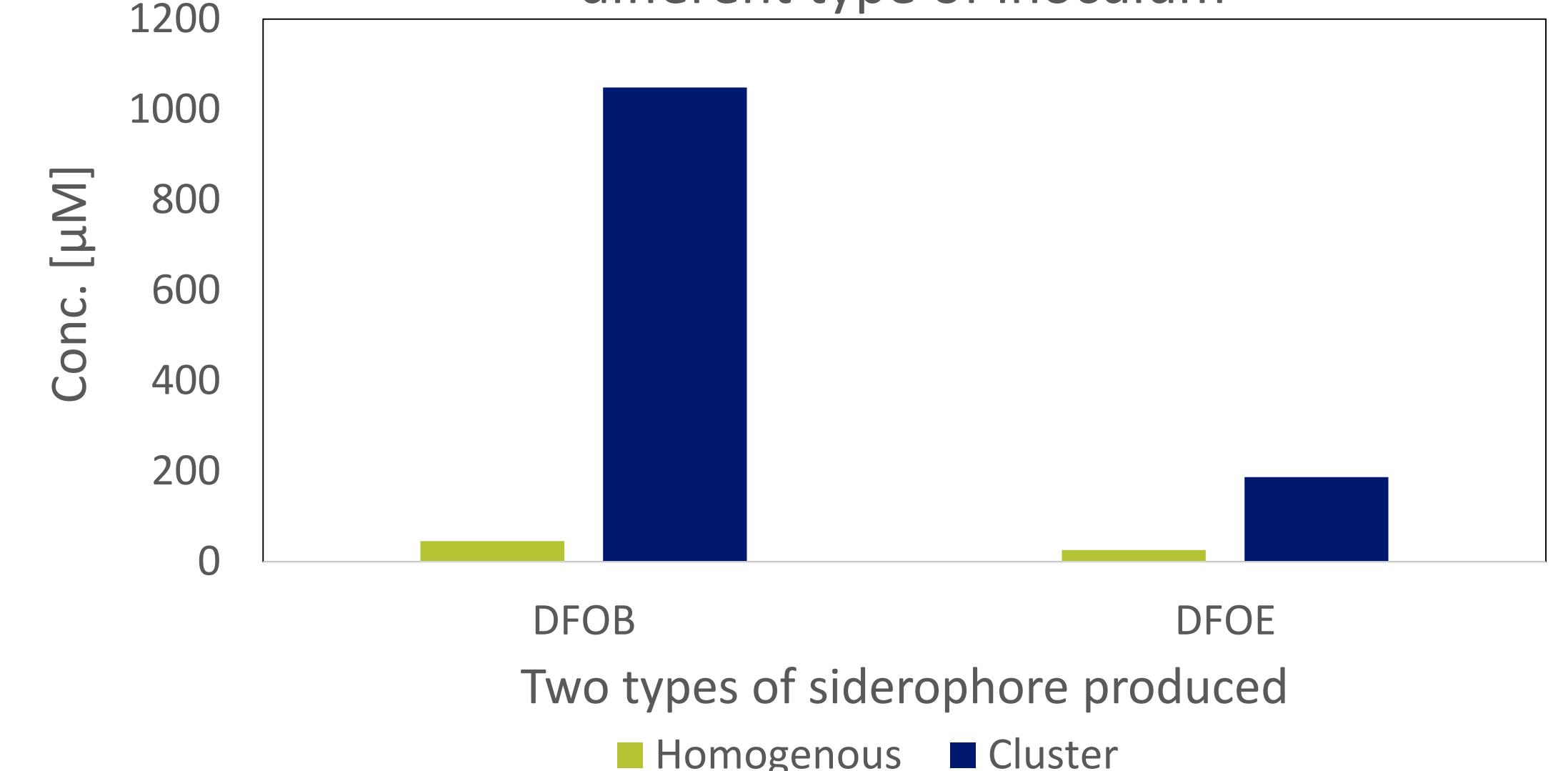
Production of DFOB in *S. pilosus* in different culturing media



Effect of phosphate on DFOB production



Comparative siderophore production using different type of inoculum



CONCLUSION

- Streptomyces pilosus* produces two siderophore DFOB and DFOE, where DFOB is dominantly produced in both complex media like Yeast Malt extract and simple media like Minimal media
- Siderophore is produced in five times more in complex media as compared to minimal media. Phosphate plays important role in production of Desferrioxamines.
- The inoculum with homogenous culture produces siderophore in relatively lesser (five times lesser) quantity than the inoculum with clusters.
- The morphology difference in both kind of inoculum and cultures indicates indirect relation between morphology of *Streptomyces pilosus* and Desferrioxamine production.