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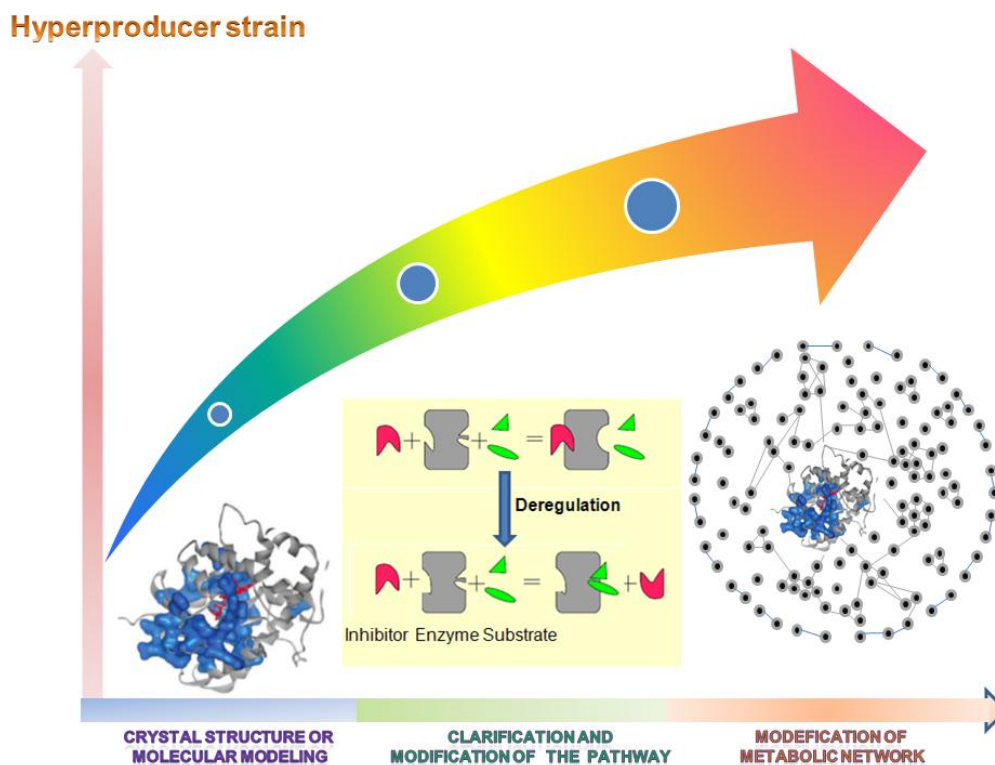
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### Description:

Even the simplest microorganism is much more sophisticated than any man-made machine. Regulations at different levels enable the cells to adjust their metabolic and physiological behavior precisely, thereby adapting to changing environment. Systems biology offers a couple of tools to elucidate the dynamics of cellular components. However, understanding the cellular regulation at a system level is still one of the challenging tasks in biotechnology.

In this study, we will combine the state-of-the-art computational and experimental technologies to model or solve the three dimensional structure of key metabolic enzymes, to understand the underlying mechanisms of their feedback inhibition by small molecules such as the final product of a pathway. This knowledge will be further applied for rational large-scale metabolic engineering or synthetic biology to generate hyper-productive industrial strains.



**Fig.1.** Integration of structure-based systems biology for strain development

### References

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