

The analysis of the project' s social needs and product positioning

The universal transcriptional regulatory pool developed by the team can be used to optimize the flow problem in the prokaryotic fermentation production process, so as to improve the yield, resistance and other functions. The acid resistance problem in amino acid fermentation industry was selected for regulation. In the amino acid fermentation industry, improving the acid tolerance of fermentation strains was conducive to improving the yield and reducing pollution emissions. The acid resistance problem selected by the team could significantly increase the cost and reduce pollution emissions after being solved. With the increasing pressure on environmental protection and the increasingly fierce competition among enterprises, the social demand to solve this problem cannot be ignored. At the same time, the amino acid fermentation industry is now worth more than \$10 billion, and many people's lives are closely related to it. Every small optimization of the production process has the potential to generate huge economic and social value.

Problem	Score
Whether the research results can solve the problems in production and life	1
Whether the research results address the problem of whether there are currently alternatives	1
Whether the research results solve the problems faced by the production and life of a group	1
Whether the research results can directly solve the problems in production and life	0
Whether the research results have significant advantages over the alternatives	1
Whether the group plays an important role in the social environment	1

According to the scale, the project received five 1 point and one 0 point.

A score of 1 on the first and third criteria means that the project can

solve the production and living problems in the society, and the society has demand for it. Compared with the existing scheme, this project can save significant manpower and material costs. Amino acid fermentation plays an important role in today's human industrial system, and a score of 1 on the sixth scale means that the project has some practical significance for society. In general, the society has a certain degree of demand for this project. However, since the project results cannot be directly translated into applicable products in the industry, it is impossible to predict what problems they may face in the transition process at this stage. Therefore, we focus on the social investigation of its possible problems in practical production and application.