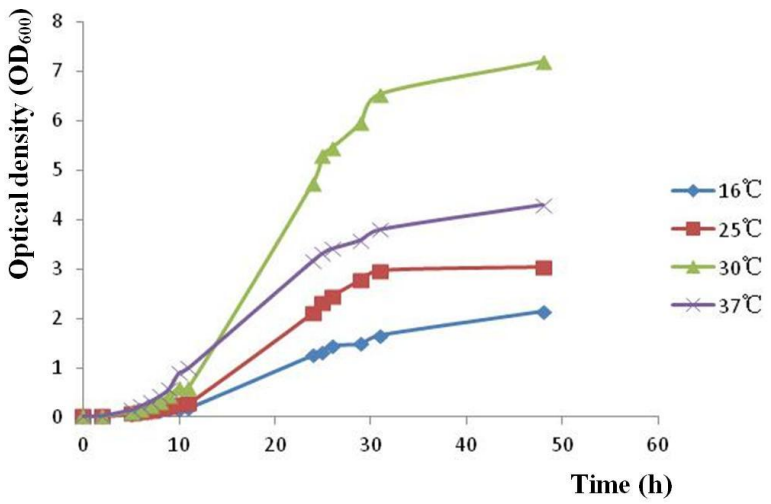

Fig. S1 Growth curves of *B. gladioli* HDXY-02 at different temperatures. Data are representative of three independent biological replicates performed at least in triplicates.

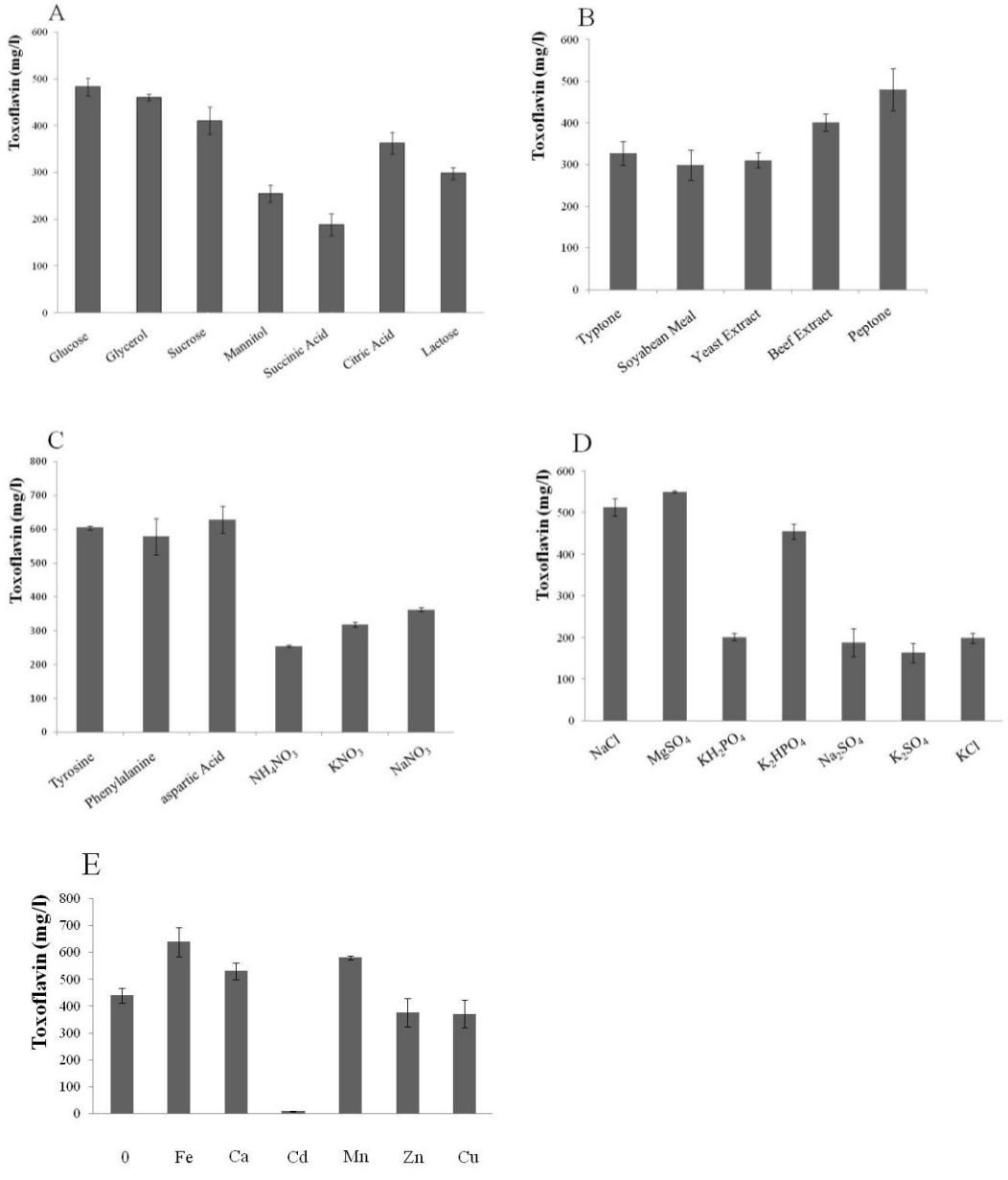

Fig. S2 Effect of different carbon (a), nitrogen (b), amino acids and nitrates (c), inorganic salts (d), metal ions (e) on toxoflavin production screened by one variable at a time (OVAT) approach.

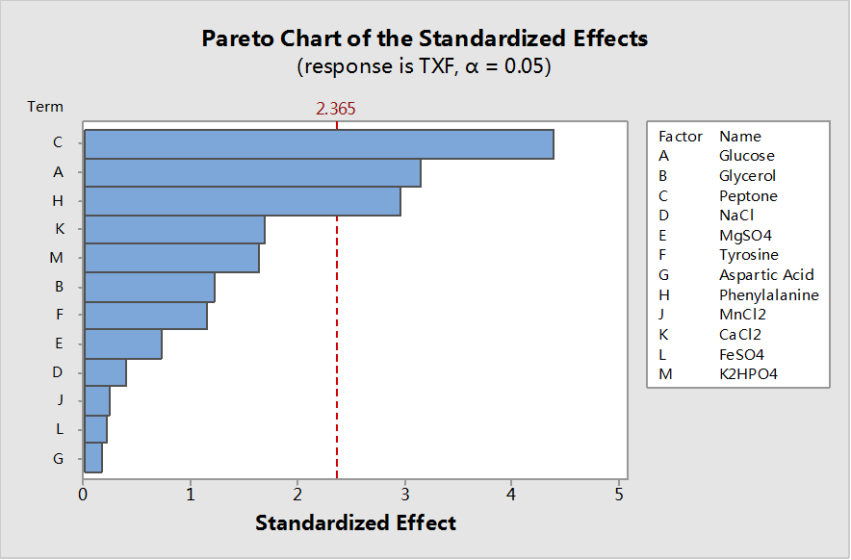

Fig. S3 Pareto chart of standard effects of 12 factor on toxoflavin production. Glucose, peptone and phenylalanine were screened as important factors. toxoflavin (TXF)

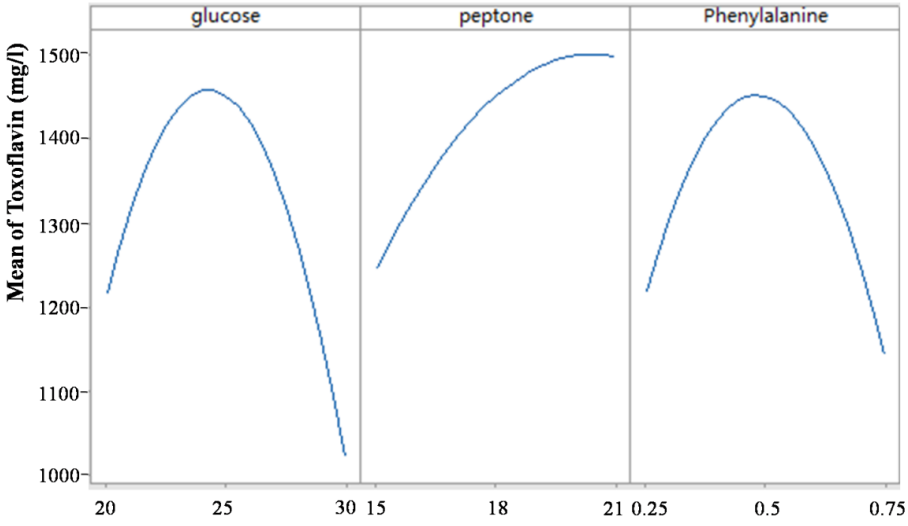

Fig. S4 Main effect plot of toxoflavin with fitted means signified the optimum concentration of Glucose, peptone and phenylalanine for highest toxoflavin production.

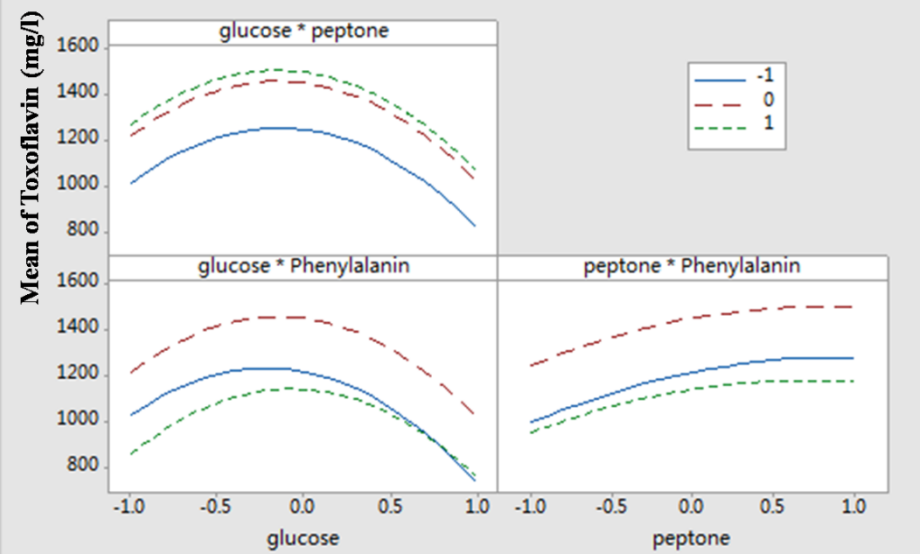

Fig. S5 Interaction plot of toxoflavin with fitted means demonstrated the effect of interaction of the variable for toxoflavin production.

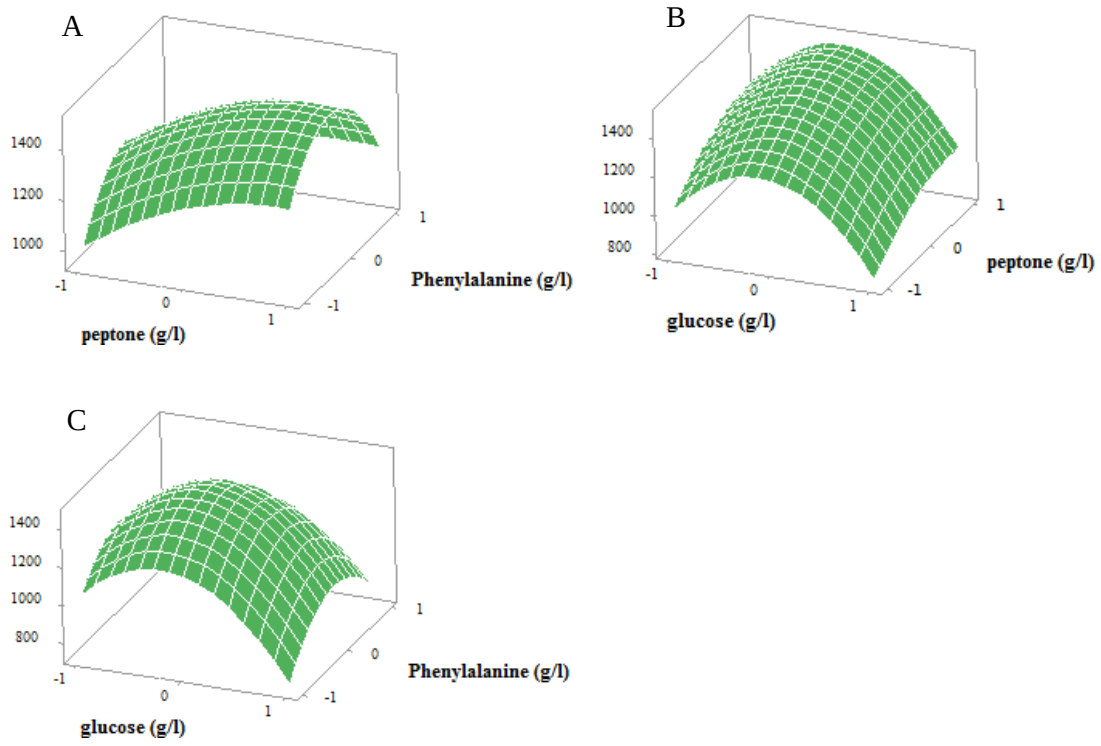

Fig. S6 Response surface of toxoflavin produced by HDXY-02. **a** effects of peptone, phenylalanine and their mutual interaction on toxoflavin production. **b** effects of glucose, peptone and their mutual interaction on toxoflavin production. **c** effects of glucose, phenylalanine and their mutual interaction on toxoflavin production

25 Table S1 Experimental variables with their higher and lower levels selected for PBD.

Factors	Variables	Low level(-1)	High level(+1)
Glucose (g/l)	x_1	6	18
Glycerol (ml/l)	x_2	4	20
Peptone (g/l)	x_3	10	25
NaCl (g/l)	x_4	0	5
$MgSO_4$ (g/l)	x_5	0	2
Tyrosine(g/l)	x_6	0.1	0.5
Aspartic acid(g/l)	x_7	0.1	0.5
Phenylalanine(g/l)	x_8	0.1	0.5
$MnCl_2$(mM)	x_9	0	1
$CaCl_2$(mM)	x_{10}	0	1
$FeSO_4$ (mM)	x_{11}	0	1
K_2HPO_4(g/l)	x_{12}	0.5	2.5

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Table S2 Selected variable range selected for toxoflavin production using BBD.

Factors	Symbol	Levels		
		-1	0	1
Glucose(g/l)	x_1	20	25	30
Peptone(g/l)	x_2	15	18	21
Phenylalanine(g/l)	x_3	0.25	0.5	0.75