

Table 1. Factors of the central composite rotatable design and their five levels

Factors	Levels				
Coded value	-1.4142	-1	0	1	1.4142
pH	4.8	5.15	6.0	6.85	7.2
q_s (mg _{gly} .g _{CDW} ⁻¹ .h ⁻¹)	20	29	50	71	80

q_s: Specific glycerol feeding rate

Table 2. Matrix of the levels of the two factors of the central composite rotatable design tested during the bioconversion step

Run code	pH	qs (mg_{gly}·g_{CDW}⁻¹·h⁻¹)
R1	5.15	29
R2	5.15	71
R3	6.85	29
R4	6.85	71
R5	4.8	50
R6	7.2	50
R7	6.0	20
R8	6.0	80
R9-R10-R11	6.0	50

Table 3. Coefficients of the polynomials describing the effects of pH and specific glycerol feeding rate on glycerol bioconversion into 3-HP by *L. reuteri* DSM 17938

Polynomial coefficients	3-HP final quantity (g _{3-HP})	3-HP production yield (g _{3-HP} ·g _{CDW} ⁻¹)	Specific 3-HP production rate (mg _{3-HP} ·g _{CDW} ⁻¹ ·h ⁻¹)
a₀	4.015	1.100	29.755
a₁	-0.145 ^{ns}	-0.041 ^{ns}	0.695 ^{ns}
a₂	0.497 ^{**}	0.118 [*]	10.398 ^{**}
a₁₁	-0.945 ^{**}	-0.329 ^{**}	-1.611 ^{ns}
a₂₂	-0.700 ^{**}	-0.239 ^{**}	-2.531 ^{ns}
a₁₂	-0.070 ^{ns}	-0.038 ^{ns}	0.045 ^{ns}
STD	0.213	0.073	3.955
R²	0.94	0.93	0.85

a₀: constant coefficient corresponding to the central point (when all coded values are set to 0);
a₁: linear coefficient for pH; *a₂*: linear coefficient for specific glycerol feeding rate; *a₁₁*:
quadratic coefficient for pH; *a₂₂*: quadratic coefficient for specific glycerol feeding rate; *a₁₂*
cross-product coefficient; *STD*: standard error of estimation of the variable; *R²*: multiple
correlation coefficient; Confidence levels: * 95 %; ** 99 %; ns: not significant at 90 %