

Supplementary Data

Table 1 The primer sequences used in this study

Primer Name	Sequence (5'-3')
T7P-F	TAATACGACTCACTATAGGGGTCT
388-sgRNA1-R	AATCGATATTAGTTTCTTTAGTGCCACTTCTCAGATTTGAGA
388-sgRNA2-R	TATCGATTCATCAGAAAATTGTGCCACTTCTCAGATTTGAGA
388-sgRNA3-R	AAACTAATATCGATTCATCAGTGCCACTTCTCAGATTTGAGA
388-sgRNA4-R	AAGAACTAATATCGATTCAGTGCCACTTCTCAGATTTGAGA
388-sgRNA5-R	GAAACTAATATCGATTCATCGTGCCACTTCTCAGATTTGAGA
521-sgRNA1-R	ATGAACGCATATATCCACATGTGCCACTTCTCAGATTTGAGA
521-sgRNA2-R	ACCCATGAACGCATATATCCGTGCCACTTCTCAGATTTGAGA
521-sgRNA3-R	TTACCCATGAACGCATATATGTGCCACTTCTCAGATTTGAGA
521-sgRNA4-R	CATATTACCCATGAACGCATGTGCCACTTCTCAGATTTGAGA
521-sgRNA5-R	TGGATATATGCGTTCATGGGGTGCCACTTCTCAGATTTGAGA

Table 2 The response surface analysis level coding

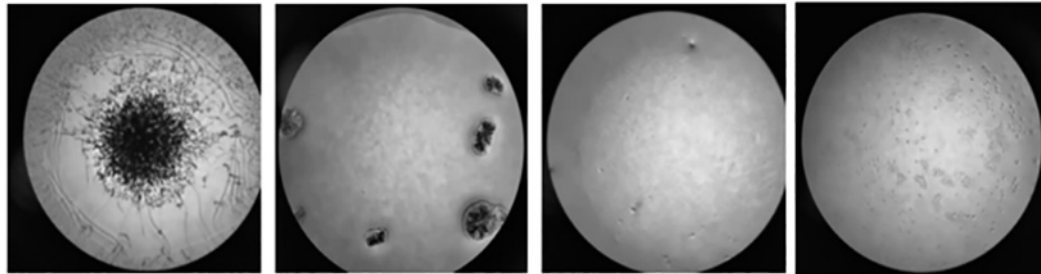
Factor	Code	Level		
		-1	0	1
Vacuum pressure (kPa)	<i>A</i>	90	95	100
Drying Temperature (°C)	<i>B</i>	15	20	25
Drying Time (h)	<i>C</i>	4	5	6

Table 3 The response surface analysis level coding

Run	Factor A (Vacuum pressure)	Factor B (Drying Temperature)	Factor C (Drying Time)	Response (residual relative activity(%))
1	-1	-1	0	92.85
2	-1	1	0	93.60
3	1	1	0	97.15
4	0	0	0	97.61
5	0	0	0	98.11
6	1	0	-1	95.62
7	-1	0	1	93.86
8	0	-1	1	96.05
9	0	1	1	97.06
10	0	0	0	97.98
11	1	0	1	97.12
12	-1	0	-1	93.56
13	1	-1	0	93.89
14	0	-1	-1	94.73
15	0	1	-1	96.42
16	0	0	0	98.02
17	0	0	0	98.17

Figure S1

Microscopic forms of vacuum-dried vitrified CRISPR/Cas12b premix with different additives

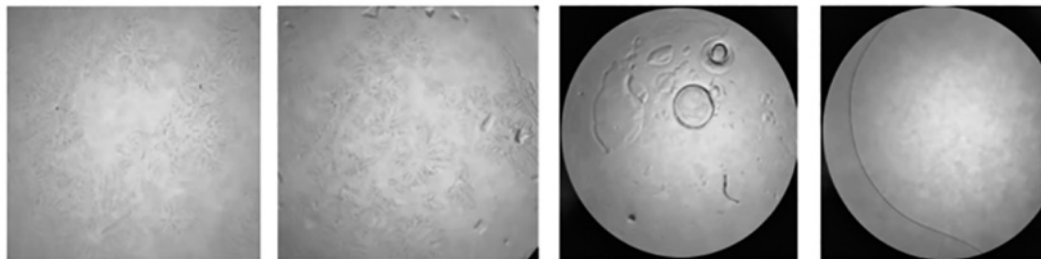


Methyl- β -cyclodextrin

Panose

Hyaluronic acid

Xanthan gum

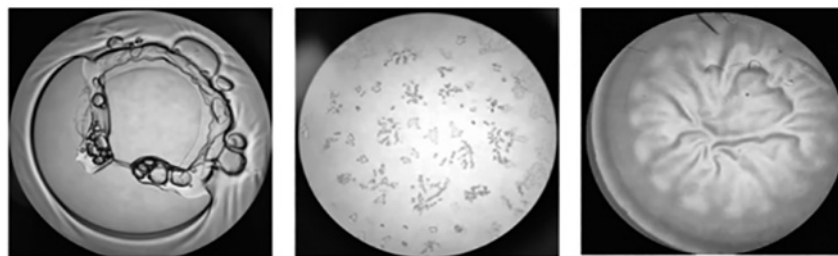


Sodium alginate

Pullulan

Pectin

Sucrose



CMC

Trehalose

Maltodextrin

Figure S2

Effects of response surface analysis levels on residual relative activity of vitrified CRISPR/Cas12b premix

