Supplementary Materias

***In vitro* study of the gel cohesiveness and persistence to hyaluronidase degradation of a novel stabilized composition of 26 mg/mL of high molecular weight HA**

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Supplementary Table 1. Raw data of elasticity modulus G' (Pa), normality assessment and homogeneity of variances datasets through Shapiro-Wilk and Levene tests, respectively

Elasticity modulus G' (Pa)	2.6%HA/3.2%Sorbitol	VYC-12	NASHA-20
Data 1	508.0	174.8	338.3
Data 2	529.0	142.0	389.4
Data 3	533.0	158.0	400.7
Shapiro-Wilk			
p-value	0.493	1.000	0.571
W-statistic	0.866	1.000	0.881
Normality	normal	normal	normal
Levene	Comparison of the 3 datasets		
p-value	0.167		
F-statistic	2.45		
Homogeneity of variances	Homogeneous		

For Shapiro-Wilk, since the p-values are greater than the significance threshold (α = 0.05), the null hypothesis H_0 fails to be rejected. Since the W statistic are close to 1 and higher than the W critical value at the 5% level for $n = 3$ ($W_{0.05} = 0.767$), it further supports the conclusion that data can be considered as normally distributed.
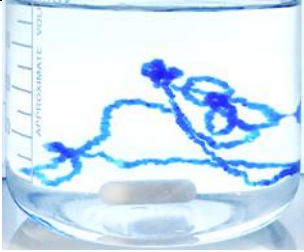
In the Levene's test, since the p-value is greater than the significance threshold (α = 0.05), and F statistic is lower than the F critical value at the 5% level ($F_{(2,6)} = 5.14$), the null hypothesis fails to be rejected, indicating that the variances between the groups are not significantly different, and thus, homogeneity of variances can be assumed.
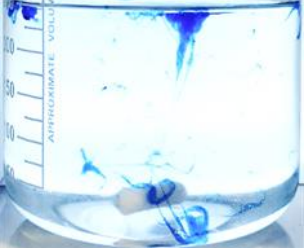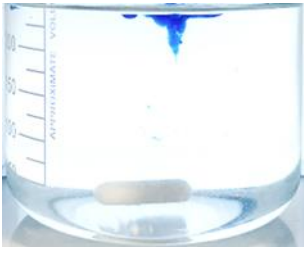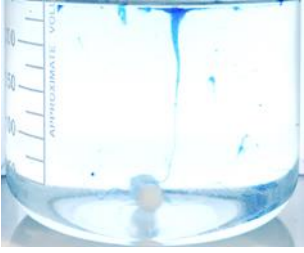
Supplementary Table 2. Raw data of time of enzymatic degradation (min), normality assessment and homogeneity of variances of time of enzymatic degradation datasets through Shapiro-Wilk and Levene tests, respectively

Degradation time (min)	2.6%HA/3.2%Sorbitol	VYC-12	NASHA-20
Data 1	41.5	29.5	12.5
Data 2	38.5	12.5	18
Data 3	37.5	23.5	13.25
Shapiro-Wilk	2.6%HA/3.2%Sorbitol	VYC-12	NASHA-20
p-value	0.830	0.997	0.412
W-statistic	0.923	0.972	0.850
Normality	normal	normal	normal
Levene	Comparison of the 3 datasets		
p-value	0.117		
F-statistic	3.14		
Homogeneity of variances	Homogeneous		

For Shapiro-Wilk, since the p-values are greater than the significance threshold ($\alpha = 0.05$), the null hypothesis H_0 fails to be rejected. Since the W statistic are close to 1 and higher than the W critical value at the 5% level for $n = 3$ ($W_{0.05} = 0.767$), it further supports the co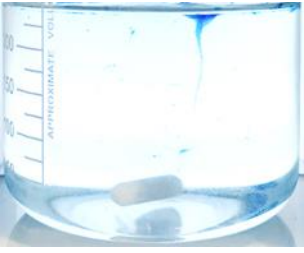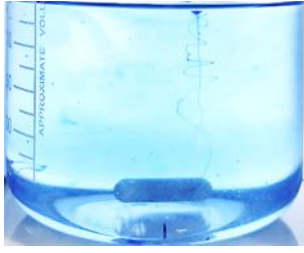nclusion that data can be considered as normally distributed. In the Levene's test, since the p-value is greater than the significance threshold ($\alpha = 0.05$), and F statistic is lower than the F critical value at the 5% level ($F_{(2,6)} = 5.14$), the null hypothesis fails to be rejected, indicating that the variances between the groups are not significantly different, and thus, homogeneity of variances can be assumed.
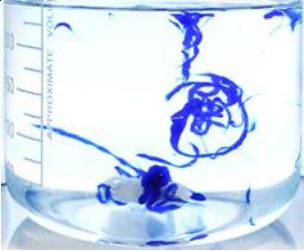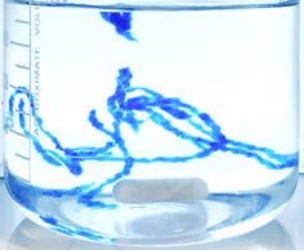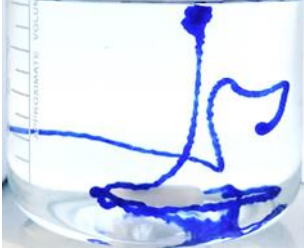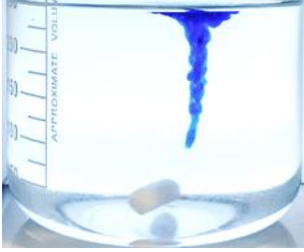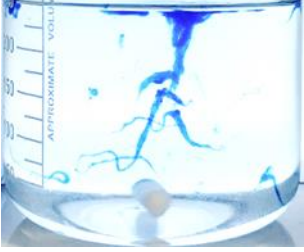
Supplementary Table 3. Images and cohesivity scores for 2.6% H-HA/3.2% sorbitol composition along the enzymatic degradation process
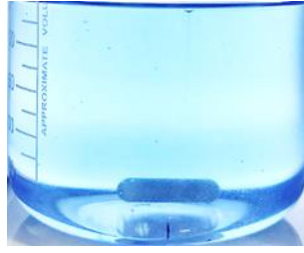
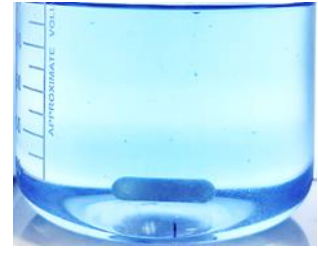| Degradation time (min)	Images and cohesivity scores after		
	15 s	70 s	95 s
0	5.0 ± 0.0	5.0 ± 0.0	5.0. ± 0.0
1.5	5.0 ± 0.0	5.0 ± 0.0	5.0. ± 0.0
3.5	5.0 ± 0.0	4.0 ± 0.0	4.0. ± 0.0
5	5.0 ± 0.0	3.3 ± 0.6	2.7. ± 0.6
8	3.0 ± 1.0	2.7 ± 0.6	1.7 ± 0.6

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	1.0 ± 0.0	1.0 ± 0.0	$1.0. \pm 0.0$