

Accepted Manuscript

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PII: S0141-8130(18)32298-0
DOI: doi:[10.1016/j.ijbiomac.2018.07.139](https://doi.org/10.1016/j.ijbiomac.2018.07.139)
Reference: BIOMAC 10183

To appear in: *International Journal of Biological Macromolecules*

Received date: 13 May 2018
Revised date: 16 July 2018
Accepted date: 20 July 2018

Please cite this article as: Ping Shao, Pei Wang, Ben Niu, Ji Kang , Environmental stress stability of pectin-stabilized resveratrol liposomes with different degree of esterification. Biomac (2018), doi:[10.1016/j.ijbiomac.2018.07.139](https://doi.org/10.1016/j.ijbiomac.2018.07.139)

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Environmental stress stability of pectin-stabilized resveratrol liposomes with different degree of esterification

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Abstract: Based on the hydrogen bonding ability of polysaccharides and phospholipids and steric hindrance, nanoliposomes (LPs), pectin-coated resveratrol liposomes (LMP-LPs and HMP-LPs) with different esterification degrees (DE=30%, 70%) were prepared. The entrapment efficiency was $78 \pm 5\%$. The addition of pectin with different degree of esterification (DE=0%, 30%, 70%) increased the particle size of liposomes from 102 nm to 122 nm and 140 nm and negative charge change from -13.63 mV to -20.96 mV and -30.11mV respectively. This is mainly due to the adsorption of pectin on the liposome surface. Some environmental factors such as pH, ionic strength and temperature have a significant effect on the appearance, particle size and leakage rate of liposomes. Experiments have shown that the leakage rate of low-methoxy pectin-coated liposomes resveratrol is lower, and this work provides useful information on the use of low-methoxy pectin for controlling food release.

Keywords: Liposomes; Low methoxy pectin; High methoxy pectin; resveratrol.

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