

## Supplementary material

### **Galactooligosaccharides in infant formulas: the characteristics of Maillard reaction and influence on formation of advanced glycation end products**

Feifei Shang <sup>a</sup>, Rugang Zhu <sup>a, b\*</sup>, Huan Li <sup>b</sup>, Tianyi Zhen <sup>b</sup>, Tiejing Li <sup>b</sup>, Lifeng Song <sup>c</sup>,  
Zhongtian Pan <sup>a</sup>, Qiao Zhang <sup>a</sup>, Haijing Lan <sup>a</sup>, Zhenhua Duan <sup>a</sup>

<sup>a</sup> *College of Food and Biological Engineering/Institute of Food Science and Engineering Technology, Hezhou University, Hezhou 542899, China*

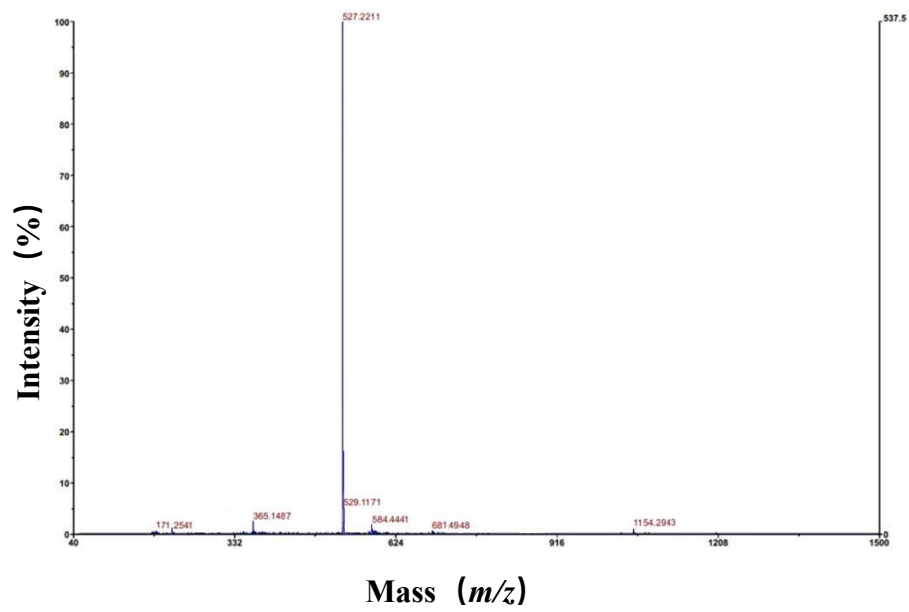
<sup>b</sup> *Department of Food Science, College of Light Industry, Liaoning University, Liaoning Engineering Research Center for Food Bioprocessing, Shenyang Key Laboratory of Food Bioprocessing and Quality Control, Shenyang 110036, China*

<sup>c</sup> *Institute for Cadre of Liaoning Economic Management, Shenyang 110122, China*

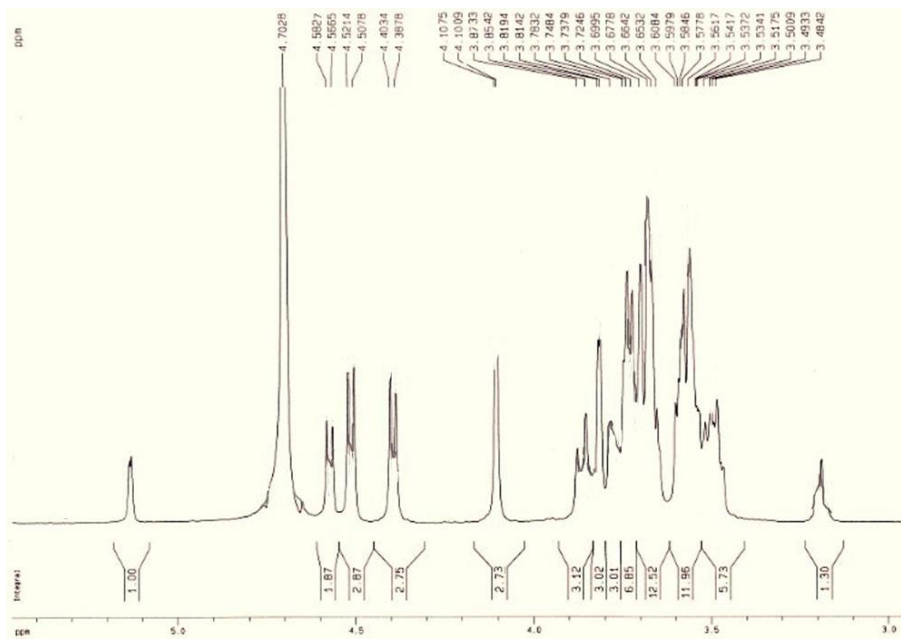
<sup>d</sup> *School of Life Science, Liaoning University, Shenyang 110036, China*

**Correspondence:** Rugang Zhu, Department of Food Science, College of Light Industry, Liaoning University, Shenyang 110036, China. Tel/Fax: +86 24 62202139.

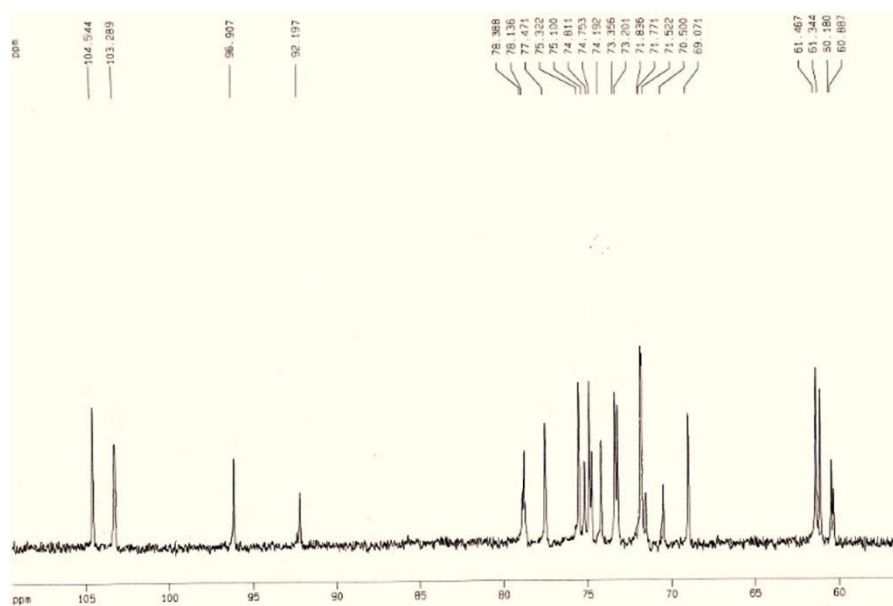
E-mail: [zhurugang@lnu.edu.cn](mailto:zhurugang@lnu.edu.cn)



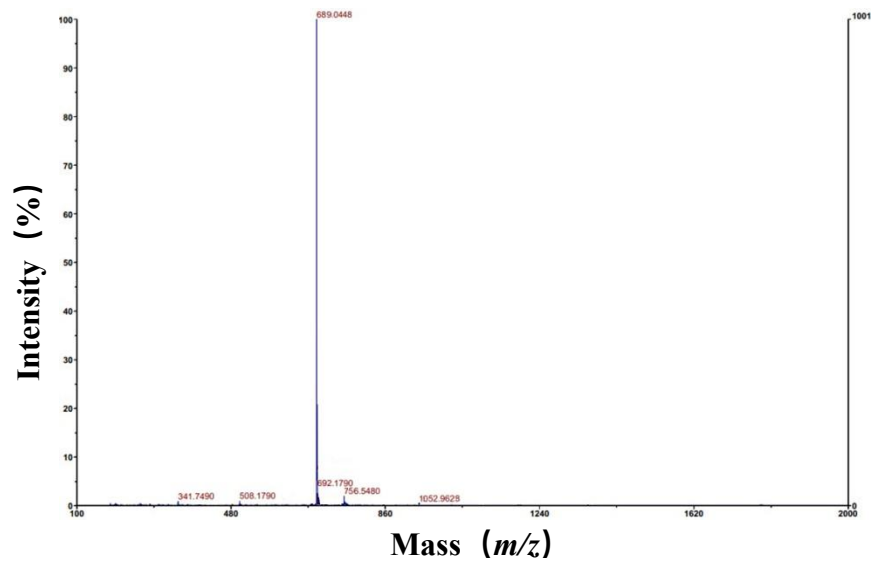
**Fig. S1a.** MS spectra of  $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\alpha,\beta$ -GlcP (GOS3).



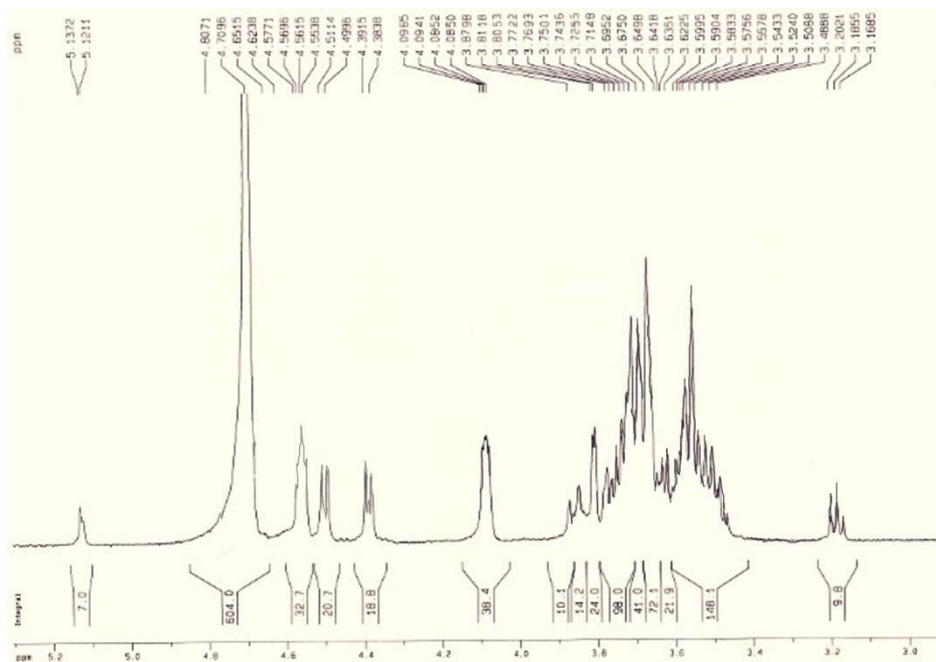
**Fig. S1b.** <sup>1</sup>H NMR spectra of β-Galp-(1→4)-β-Galp-(1→4)-α,β-Glcp (GOS3).



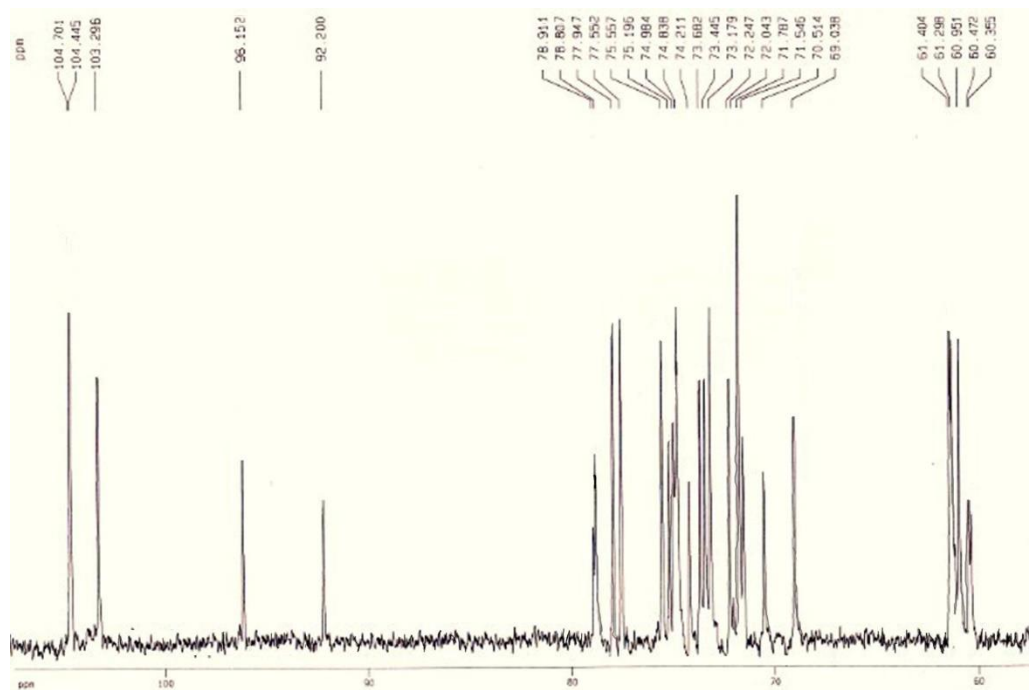
**Fig. S1c.** <sup>13</sup>C NMR spectra of  $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\alpha$ , $\beta$ -Glcp (GOS3).



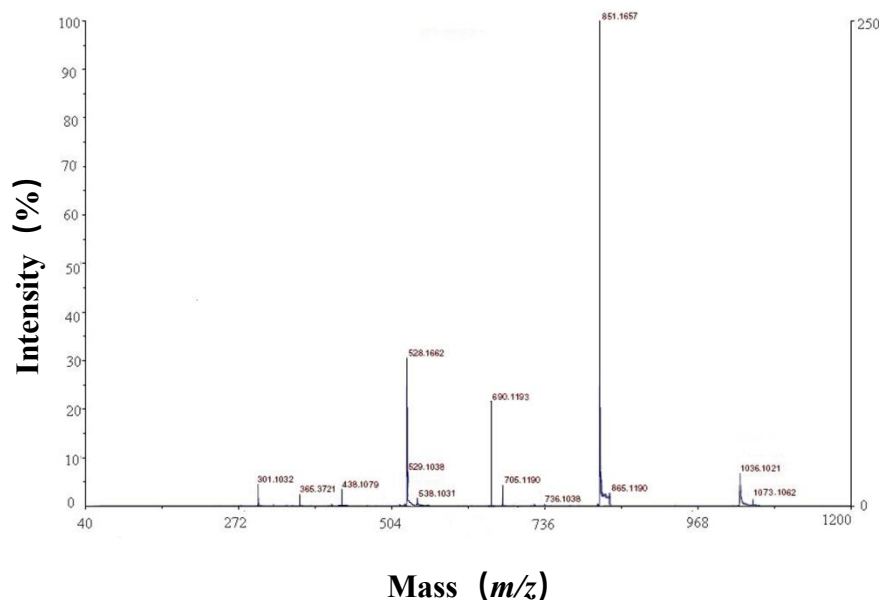
**Fig. S2a.** MS spectra of  $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\alpha,\beta$ -Glcp (GOS4).



**Fig. S2b.** <sup>1</sup>H NMR spectra of β-Galp-(1→4)-β-Galp-(1→4)-β-Galp-(1→4)-α,β-Glcp (GOS4).



**Fig. S2c.** <sup>13</sup>C NMR spectra of  $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\alpha$ , $\beta$ -Glc<sub>p</sub> (GOS4).



**Fig. S3a.** MS spectra of  $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\beta$ -Galp-(1 $\rightarrow$ 4)- $\alpha$ , $\beta$ -Glc<sub>p</sub> (GOS5).