

# High Expression Level of $\alpha$ 2-3-Linked Sialic Acids on Salivary Glycoproteins of Breastfeeding Women May Help to Protect Them from Avian Influenza Virus Infection

Li Ding <sup>1</sup>, Yimin Cheng <sup>2</sup>, Wei Guo <sup>3</sup>, Siyue Sun <sup>1</sup>, Xiangqin Chen <sup>1</sup>, Tiantian Zhang <sup>1</sup>, Hongwei Cheng <sup>1</sup>, Jiayue Hao <sup>1</sup>, Yunhua Lu <sup>1</sup>, Xiurong Wang <sup>4</sup> and Zheng Li <sup>1,\*</sup>

<sup>1</sup> Laboratory for Functional Glycomics, College of Life Sciences, Northwest University, Xi'an 710069, China; liding@nwu.edu.cn (L.D.); sunsiyue@stumail.nwu.edu.cn (S.S.); chenxiangqin@stumail.nwu.edu.cn (X.C.); 202032666@stumail.nwu.edu.cn (T.Z.); 202133269@stumail.nwu.edu.cn (H.C.); haojiayue@stumail.nwu.edu.cn (J.H.); 201932005@stumail.nwu.edu.cn (Y.L.)

<sup>2</sup> Department of Obstetrics and Gynecology, Xi'an Shiyou University, Xi'an 710065, China; ymcheng@xsyu.edu.cn

<sup>3</sup> Department of Obstetrics and Gynecology, Shaanxi Provincial People's Hospital, Xi'an 710068, China; viking226@163.com

<sup>4</sup> National Key Laboratory of Veterinary Biotechnology, Harbin Veterinary Research Institute, Chinese Academy of Agricultural Science, Harbin 150069, China; wangxiurong@caas.cn

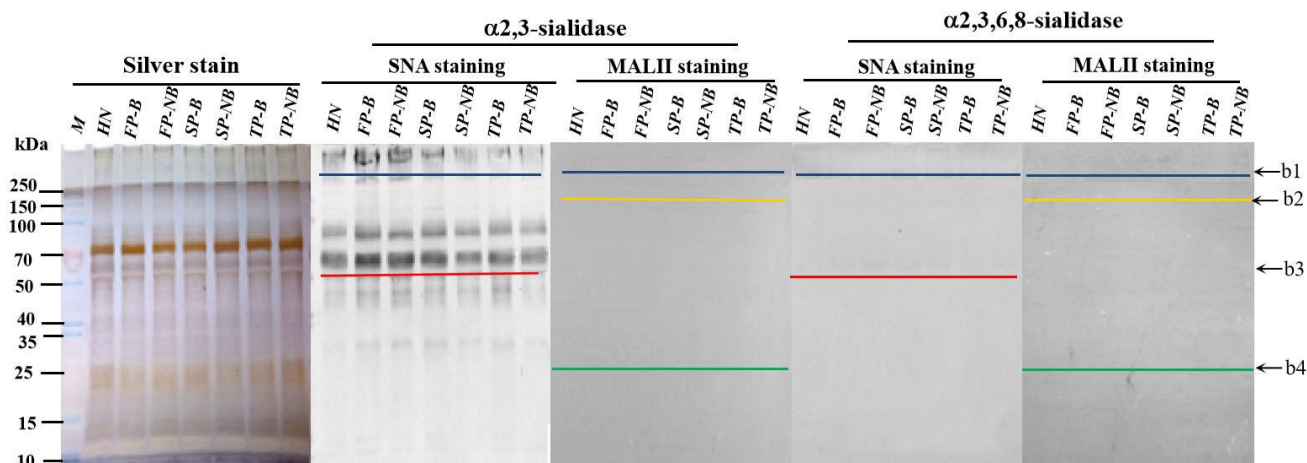
\* Correspondence: zhengli@nwu.edu.cn

**Table S1.** The demographic characteristics of the healthy control and postpartum women with and without breastfeeding.

Parameter		FP-B	FP-NB	SP-B	SP-NB	TP-B	TP-NB
Sample number(n)		30	15	30	30	30	30
Age, years, median, SD		29.2±2.5	29.4±3.5	30.1±4.5	30.6±4.6	30.2±3.9	31.1±3.7
Bradford assay	OD <sub>595</sub>	0.914	0.875	0.771	0.870	0.899	0.875
	PC (mg/mL)	0.905	0.860	0.739	0.854	0.888	0.860
Lectin	Specificity	NFI±SD					
SNA	Sia $\alpha$ 2-6Gal/GalNAc	0.0227	0.0216	0.0231	0.0247	0.0234	0.0253
		±0.0038	±0.0068	±0.0029	±0.0018	±0.0048	±0.0046

		Fold change					
		FP-NB	FP-B	SP-NB	SP-B	TP-NB	TP-B
		/FP-B	/FP-NB	/SP-B	/SP-NB	/TP-B	/TP-NB
		0.95	1.05	0.94	1.07	0.93	1.08
Lectin	Specificity	NFI±SD					
MAL-II	Siaα2-3Galβ1-4Glc	0.0100	0.0013	0.0107	0.0062	0.0130	0.0087
	(NAc)/Glc, Siaα2-3Gal,	±0.0013	±0.0013	±0.0022	±0.0021	±0.0026	±0.0013
	Siaα2-3GalNAc	Fold change					
		FP-NB	FP-B	SP-NB	SP-B	TP-NB	TP-B
		/FP-B	/FP-NB	/SP-B	/SP-NB	/TP-B	/TP-NB
		0.13***	7.69***	0.58***	1.72***	0.67**	1.49**

FP-B: first-period of postpartum women with breastfeeding; FP-NB: first-period of postpartum women without breastfeeding; SP-B: second-period of postpartum women with breastfeeding; SP-NB: second-period of postpartum women without breastfeeding; TP-B: third-period of postpartum women with breastfeeding; TP-NB: third-period of postpartum women without breastfeeding. \*\*  $p < 0.01$ , and \*\*\*  $p < 0.001$



**Figure S1** The binding profiles of SAN (A) or MAL-II (B) to salivary proteins treated with sialidase

FP-B: first-period of postpartum women with breastfeeding; FP-NB: first-period of postpartum women without breastfeeding; SP-B: second-period of postpartum women with breastfeeding; SP-NB: second-period of postpartum women without breastfeeding; TP-B: third-period of postpartum women with breastfeeding; TP-NB: third-period of postpartum women without breastfeeding.