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MDPI

SUPPLEMENTARY MATERIALS

Chitosan Elicitation Impacts Flavonolignan Biosynthesis in *Silybum marianum* (L.) Gaertn Cell Suspension and Enhances Antioxidant and Anti-inflammatory Activities of Cell Extracts

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Supplementary Materials List:

Figure S1: Loading scores of the first (PC1) and second (PC2) axis of the principal component analysis of the parameters measured in extract of cell suspension cultures of *S. marianum* in response to chitosan elicitation.

Table S1: Actual values for PCC (Pearson correlation coefficient) presented in Figure 4 showing the relation between the main phytochemicals and the biological activities (antioxidant and anti-inflammatory) of extracts of cell suspension cultures of *S. marianum* in response to chitosan elicitation.

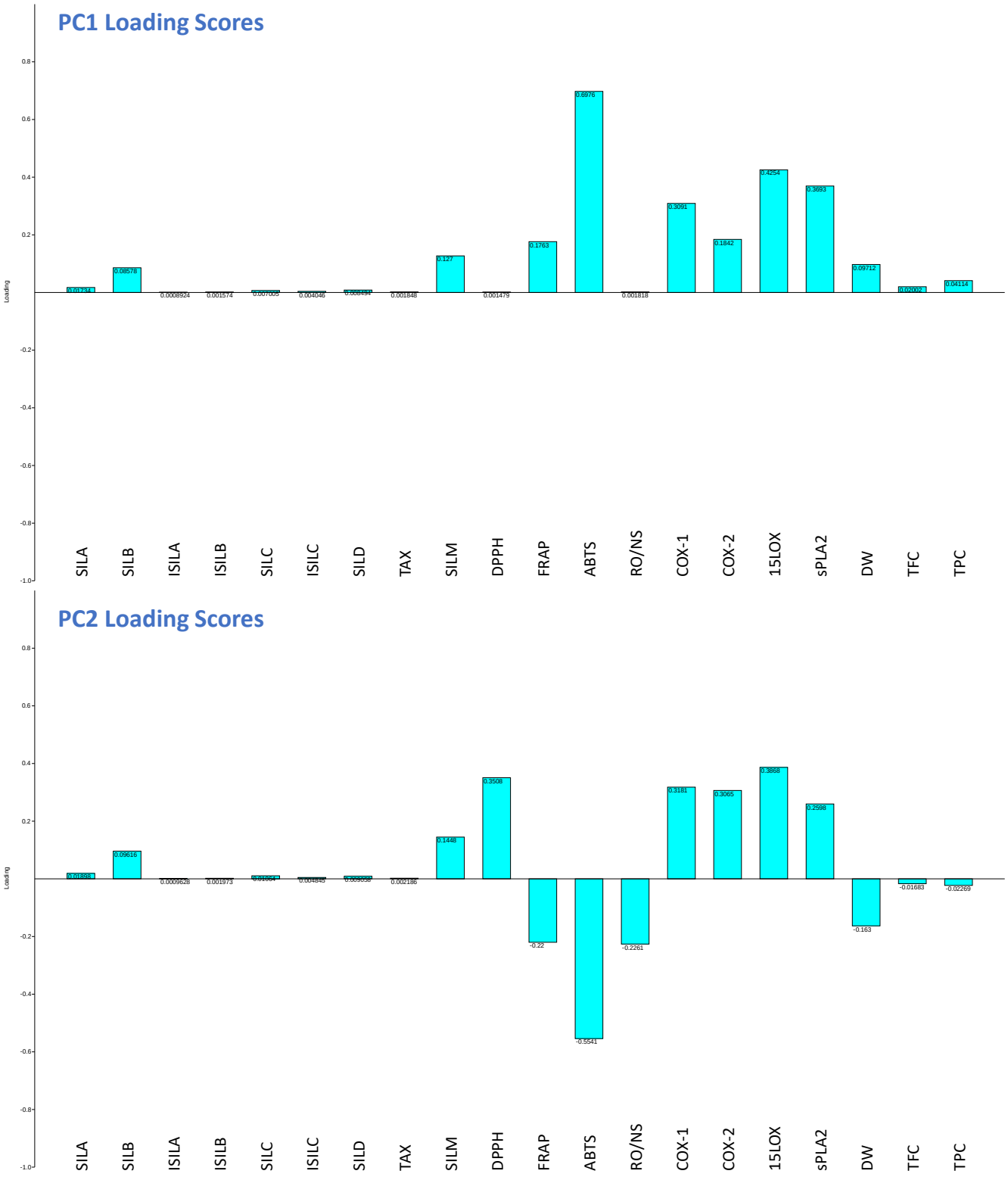

Figure S1: Loading scores of the first (PC1) and second (PC2) axis of the principal component analysis of the parameters measured in extract of cell suspension cultures of *S. marianum* in response to chitosan elicitation.

Phytochemicals: SILA: silybin A; SILB: silybin B; ISILA: isosilybin A; ISILB: isosilybin B; SILC: silychristin; ISILC: isosilychristin; SILD: silydianin; TAX: taxifolin; SILM: silymarin; TFC: total flavonoid content; TPC: total phenolic content. **Antioxidants assays:** DPPH: 2,2-diphenyl-1-picrylhydrazyl *in vitro* antioxidant assay; FRAP: ferric reducing antioxidant power *in vitro* antioxidant assay. ABTS: 2,2-azinobis-3-ethylbenzthiazoline-6-sulphonic acid *in vitro* antioxidant assay; RO/NS: cellular antioxidant assay (reactive of oxygen and nitrogen species). Anti-inflammatory: COX-1: cyclooxygenase 1 inhibition; COX-2: cyclooxygenase 2 inhibition; 15LOX: 15-lipoxygenase inhibition; sPLA2: secretory phospholipase A2 inhibition. **Biomass:** DW: dry weight.

Table S1: Actual values for PCC (Pearson correlation coefficient) presented in Figure 4 showing the relation between the main phytochemicals and the biological activities (antioxidant and anti-inflammatory) of extracts of cell suspension cultures of *S. marianum* in response to chitosan elicitation.

	SILA	SILB	ISILA	ISILB	SILC	ISILC	SILD	TAX	SILM	**TPC**	**TFC**
DPPH	*0.365* *ns*	*0.330* *ns*	*0.357* *ns*	*0.289* *ns*	*0.356* *ns*	*0.307* *ns*	*0.302* *ns*	*0.415* *ns*	*0.335* *ns*	*-0.101* *ns*	*-0.022* *ns*
FRAP	*0.287* *ns*	*0.301* *ns*	*0.266* *ns*	*0.236* *ns*	*0.213* *ns*	*0.313* *ns*	*0.267* *ns*	*0.253* *ns*	*0.291* *ns*	*0.344* *ns*	*0.756* *ns*
ABTS	*0.565* *ns*	*0.558* *ns*	*0.565* *ns*	*0.482* *ns*	*0.418* *ns*	*0.535* *ns*	*0.571* *ns*	*0.555* *ns*	*0.551* *ns*	0.782 *	0.815 *
ROS/RNS	*-0.152* *ns*	*-0.183* *ns*	*-0.097* *ns*	*-0.139* *ns*	*-0.237* *ns*	*-0.254* *ns*	*-0.140* *ns*	*-0.228* *ns*	*-0.181* *ns*	*0.452* *ns*	*0.268* *ns*
COX1	0.960 *	0.950 *	0.970 *	0.913 *	0.918 *	0.945 *	0.955 *	0.959 *	0.952 *	*0.392* *ns*	*0.464* *ns*
COX2	0.802 ***	0.810 ***	0.805 ***	0.781 ***	0.770 ***	0.801 ***	0.825 ***	0.828 ***	0.809 ***	*0.437* *ns*	*0.298* *ns*
15-LOX	0.927 ***	0.942 ***	0.897 **	0.882 **	0.878 **	0.946 ***	0.926 ***	0.937 ***	0.936 ***	*0.490* *ns*	*0.660* *ns*
SPLA2	0.853 **	0.877 **	0.814 *	0.815 *	0.808 *	0.886 **	0.850 **	0.851 **	0.868 **	*0.473* *ns*	*0.751* *ns*

Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
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