

# Polymeric Compounds of Lingonberry Waste: Characterization of Antioxidant and Hypolipidemic Polysaccharides and Polyphenol-Polysaccharide Conjugates from *Vaccinium vitis-idaea* Press Cake

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## Supplementary Content

**Table S1.** Antioxidant activity of degradation polymers DEAE-1% NaOH-f1-d and DEAE-1% NaOH-f2-d.

**Table S2.** *In vitro* hypolipidemic activity of degradation polymers DEAE-1% NaOH-f1-d and DEAE-1% NaOH-f2-d.

**Figure S1.** HPLC-UV chromatograms of PMP-labeled samples of blank, standard monosaccharide mixture, and 2 M TFA hydrolysates of VVPS polysaccharide, fraction VVPS: DEAE-H<sub>2</sub>O, and fraction VVPS: DEAE-1% NaOH

**Figure S2.** Possible ways of MS/MS cleavage of degradation products 3–7 released after alkaline destruction of DEAE-1% NaOH-f1 and DEAE-1% NaOH-f2 polymers.

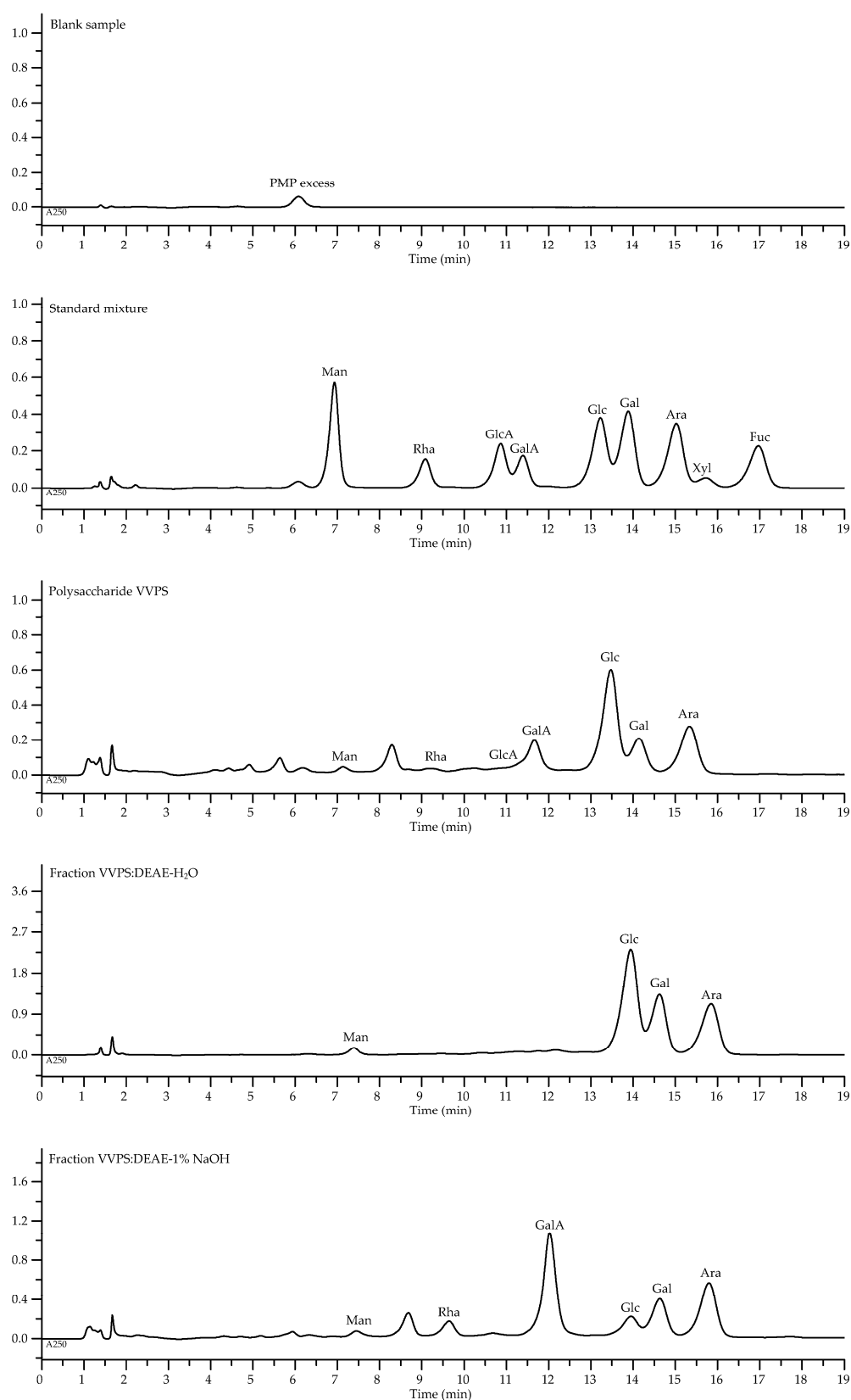
**Table S1.** Antioxidant activity of degradation polymers DEAE-1% NaOH-f1-d and DEAE-1% NaOH-f2-d.

Polysaccharide	DPPH <sup>•a</sup>	ABTS <sup>•+a</sup>	O <sub>2</sub> <sup>•-a</sup>	OH <sup>•a</sup>	Cl <sup>•b</sup>	NO <sup>a</sup>	H <sub>2</sub> O <sub>2</sub> <sup>c</sup>	FeCA <sup>d</sup>
DEAE-1% NaOH-f1-d	> 100	> 100	> 250	> 100	< 5	> 500	> 5	< 0.01
DEAE-1% NaOH-f2-d	> 100	> 100	> 250	> 100	< 5	> 500	> 5	< 0.01

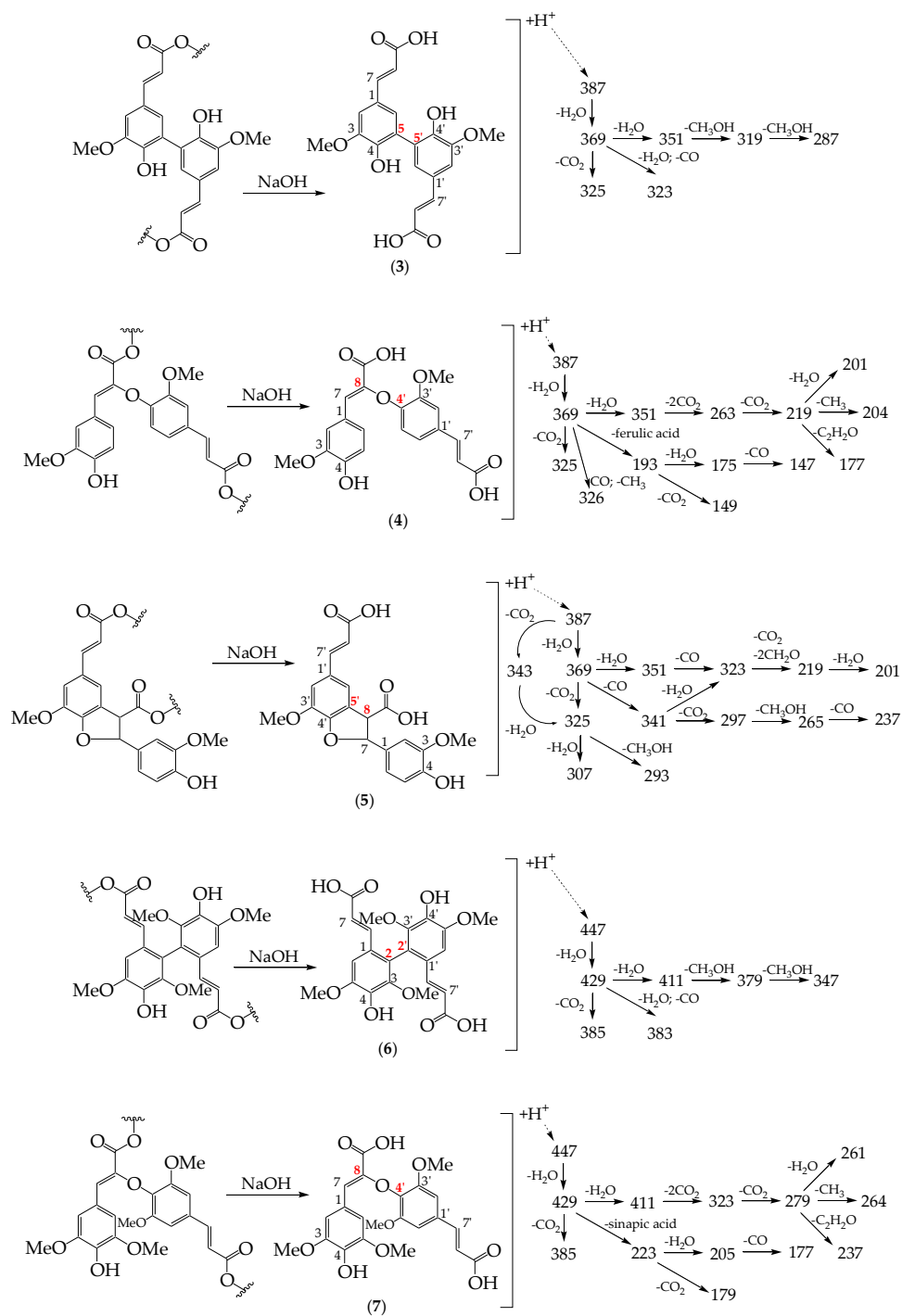
<sup>a</sup> IC<sub>50</sub>, µg/mL; <sup>b</sup> Trolox-equivalents, mg/g; <sup>c</sup> IC<sub>50</sub>, mg/mL; <sup>d</sup> mM Fe<sup>2+</sup>/g.

**Table S2.** *In vitro* hypolipidemic activity of degradation polymers DEAE-1% NaOH-f1-d and DEAE-1% NaOH-f2-d.

Polysaccharide fraction	Bile acids binding, µmole/100 g	Fat binding, g/100 g	Cholesterol binding, mg/g	Pancreatic lipase inhibition, IC <sub>50</sub> , mg/mL
DEAE-1% NaOH-f1-d	0.01 ± 0.00	Inactive (< 1)	2.28 ± 0.11	Inactive (> 30)
DEAE-1% NaOH-f2-d	0.01 ± 0.00	Inactive (< 1)	2.09 ± 0.08	Inactive (> 30)



**Figure S1.** HPLC-UV chromatograms of PMP-labeled samples of blank (a), standard monosaccharide mixture (b), and 2 M TFA hydrolysates of VVPS polysaccharide (c), fraction VVPS: DEAE-H<sub>2</sub>O (d), and fraction VVPS: DEAE-1% NaOH (e). Relative retention times ( $t_R$ ) of monosaccharides: Man = 1.00; Rha = 1.35; GlcA = 1.59; GalA = 1.68; Glc = 1.94; Gal = 2.04; Ara = 2.21; Xyl = 2.31; Fuc = 2.50.



**Figure S2.** Possible ways of MS/MS cleavage of degradation products 3–7 released after alkaline destruction of DEAE-1% NaOH-f1 and DEAE-1% NaOH-f2 polymers.