Systematic Comparison of Structural Characterization of Polysaccharides from *Ziziphus Jujuba cv. Muzao*

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Table S1. Methylation analysis data for *Zizyphus jujuba cv. Muzao* polysaccharides.

Samples	Peak No.	Retention Time (min)	Methylated Sugars	Linkage Patterns	Relative Amount (mol%)	Ref.
PZMP1	1	18.923	2,3,5-Me_3-Ara*f*	Ara*f*-(1→	16.44	[17]
	2	20.676	2,3,4,6-Me_4-Glc*p*	Gal*p*-(1→	2.55	
	3	24.030	2,4,5- Me_3-Ara*f*	→3)-Ara*f*-(1→	3.76	
	4	25.979	2,3-Me_2-Ara*f*	→5)-Ara*f*-(1→	26.51	
	5	29.170	2,3,4,6-Me_4-Glc*p*	Glc*p*-(1→	4.14	
	6	30.438	2-Me-Ara*f*	→3,5)-Ara*f*-(1→	29.81	
	7	33.280	2,3,6-Me_3-Glc*p*	→4)-Gal*p*-(1→	16.79	
PZMP2-1	1	58.767	2,3,5-Me_3-Ara*f*	Ara*f*-(1→	-	[18]
	2	65.832	2,3-Me_2-Ara*f*	→5)-Ara*f*-(1→	-	
	3	70.291	2-Me-Ara*f*	→3,5)-Ara*f*-(1→	-	
PZMP2-2	1	36.257	2,3,4,6-Me_4-Gal*p*	Gal*p*-(1→	11.52	[19]
	2	40.142	2,4,5- Me_3-Ara*f*	→3)-Ara*f*-(1→	24.97	
	3	56.720	3-Me-Rha*p*	→2,4)-Rha*p*-(1→	11.86	
	4	63.049	2,4,6-Me_3-Gal*p*	→3)-Gal*p*-(1→	19.2	
	5	65.033	2,3,6-Me_3-Gal*p*A	→4)-Gal*p*A-(1→	18.16	
	6	70.285	2-Me-Ara*f*	→3,5)-Ara*f*-(1→	14.47	
PZMP3-1	1	40.086	2,3,4-Me_3-Rha*p*	Rha*p*-(1→	7.45	[20]
	2	40.245	2,4,5-Me_3-Ara*f*	→3)-Ara*f*-(1→	5.72	
	3	41.437	2,3-Me_2-Ara*f*	→5)-Ara*f*-(1→	39.75	
	4	63.049	2,3,6-Me_3-Gal*p*	→4)-Gal*p*-(1→	16.5	
	5	65.037	2,4,6-Me_3-Gal*p*A	→4)-Gal*p*A-(1→	22.93	
	6	66.250	3,6-Me_2-Gal*p*A	→2,4)-Gal*p*A-(1→	7.65	
PZMP3-2	1	17.720	2,3,5-Me_3-Ara*f*	Ara*f*-(1→	6.25	[21]
	2	19.835	1,2,3-Me_3-Rha*p*	→4)-Rha*p*	2.51	
	3	30.543	2,3,6-Me_3-Gal*p*	→4)-Gal*p*-(1→	2.75	

	4	33.186	2,3,6-Me$_3$-Gal*p*A 1,2,3,6-Me$_4$-Gal*p*A	→4)-Gal*p*A-(1→ →4)-Gal*p*A	84.64	
	5	34.153	3,6-Me$_2$-Gal*p*A	→2,4)-Gal*p*A-(1→	3.85	
PZMP4	1	38.941	3,4-Me$_2$-Rha*p*	→2)-Rha*p*-(1→	18.95	[22]
	2	39.572	2,3,4,6-Me$_4$-Gal*p*A	Gal*p*A-(1→	11.54	
	3	40.142	2,4,5-Me$_3$-Ara*f*	→3)-Ara*f*-(1→	17.56	
	4	66.252	2,6-Me$_2$-Gal*p*A	→3,4)-Gal*p*A-(1→	51.95	
SAZMP3	1	20.344	2,3,5-Me$_3$-Ara*f*	Ara*f*-(1→	3.98	[24]
	2	29.583	2,3,4-Me$_3$-Rha*p*	Rha*p*-(1→	3.75	
	3	30.817	2,3,4,6-Me$_4$-Gal*p*	Gal*p*-(1→	1.99	
	4	31.641	2-Me-Ara*f*	→3,5)-Ara*f*-(1→	2.95	
	5	32.333	3-Me-Rha*p*	→2,4)-Rha*p*-(1→	7.04	
	6	34.850	2,3,6-Me$_3$-Gal*p*	→4)-Gal*p*-(1→	74.98	
	7	35.142	2,4,6-Me$_3$-Gal*p*	→3)-Gal*p*-(1→	5.31	
SAZMP4	1	20.355	2,3,4-Me$_3$-Rha*p*	Rha*p*-(1→	0.5	[25]
	2	26.563	2,3,5-Me$_3$-Ara*f*	Ara*f*-(1→	0.47	
	3	31.915	2-Me-Ara*f*	→3,5)-Ara*f*-(1→	0.46	
	4	34.707	3-Me-Rha*p*	→2,4)-Rha*p*-(1→	0.52	
	5	35.092	2,3,6-Me$_3$-Gal*p*	→4)-Gal*p*-(1→	28.8	

Table S2. Assignments of ^{1}H and ^{13}C NMR spectra for *Zizyphus jujuba cv. Muzao* polysaccharides.

Samples	Residues	Linkage		1	2	3	4	5	6	Ref.
PZMP1	A	→3,5)-Ara*f*-(1→	C	109.95	82.25	84.12	86.57	69.07		[17
			H	5.16	4.30	4.15	3.98	3.96		
	B	→5)-Ara*f*-(1→	C	110.31	82.25	79.15	86.72	69.03		
			H	5.10	4.30	4.15	4.05	3.85		
	C	Ara*f*-(1→	C	112.14	82.99	79.30	85.09	63.94		
			H	5.25	3.77	4.15	4.23	3.9		
	D	→5)-Ara*f*-(1→	C	110.12	82.25	79.30	85.09	69.05		
			H	5.13/5.12	4.30	4.15	4.23	3.85		
	E	→4)-Gal*p*-(1→	C	105.90	73.26	72.24	76.63	75.7	69.05	
			H	4.54	3.67	3.94	3.94	3.75	3.92	
	F	→3)-Ara*f*-(1→	C	109.95	82.25	84.12	86.57	63.94		
			H	5.16	4.30	4.15	3.98	3.92		
PZMP2-1	A	α-L-Ara*f*-(1→	C	107.14/107.51	80.92/81.32	76.62	83.93	61.17		[18]
			H	4.99/5.05	4.03/4.20	3.85	3.94	3.63		
	B	→5)-α-L-Ara*f*-(1→	C	107.14/107.51	80.92/81.32	76.62	83.93	66.32/66.58		
			H	4.99/5.05	4.03/4.20	3.85	3.94	3.71		
	C	→3,5)-α-L-Ara*f*-(1→	C	109.25	82.29	83.95	83.93	66.32/66.58		
			H	5.14	4.12	3.99	3.94	3.71		
PZMP2-2	A	→3)-Ara*f*-(1→	C	109.97	79.43	86.72	84.13	63.95		[19]
			H	5.16	3.96	4.04	4.14	3.84		
	B	→3)-Ara*f*-(1→	C	110.29	81.91	85.10	84.13	63.95		
			H	5.10	4.30	4.11	4.14	3.84		
	C	→3,5)-Ara*f*-(1→	C	112.10	84.20	86.76	84.13	69.05		
			H	5.25	4.23	4.05	4.14	3.85		
	D	→3)-Gal*p*-(1→	C	103.28/102.97	70.81	81.61	71.52	74.14	63.95	

			H	4.97/4.91	3.74	4.47	4.02	4.72	3.84	
	E	→4)-Gal*p*A-(1→	C	101.81	70.81	81.20	71.52	74.14	178.31	
			H	5.07	3.74	4.39	4.02	4.72		
	F	→3)-Gal*p*-(1→	C	102.32	70.81	81.20	71.52	74.14	63.95	
			H	5.12	3.74	4.39	4.02	4.72	3.84	
	G	→2,4)-Rha*p*-(1→	C	106.01	72.74	74.22	82.97	65.35	23.07	
			H	4.54	3.67	4.79	3.76	3.57	2.08	
	H	Gal*p*-(1→	C	99.00	70.81	85.10	71.52	74.14	63.95	
			H	3.74	3.74	4.11	4.02	3.50	3.84	
PZMP3-1	A	→4)-Gal*p*A-(1→	C	103.39	68.08	71.26	81.37	73.49	170.91	[20]
			H	5.21	3.77	4.08	4.42	4.80		
	B	→2,4)-Gal*p*A-(1→	C	103.39	70.62	71.98	81.37	73.49	171.01	
			H	5.21	3.97	4.10	4.42	4.80		
	C	→3)-Ara*f*-(1→	C	107.53	82.26	84.04	86.79	63.93		
			H	5.12	4.28	4.18	3.98	3.92		
	D	→5)-Ara*f*-(1→	C	109.35	82.26	79.06	86.79	68.34		
			H	5.12	4.28	4.17	3.99	3.93		
	E	→4)-Gal*p*-(1→	C	100.52	70.56	80.96	72.01	74.39	63.67	
			H	4.94	3.71	4.50	4.07	4.77	3.85	
PZMP3-2	A	→4)-α-D-Gal*p*A-(1→	C	102.43/101.96	70.88	71.54	80.84/81.33	74.19	173.62	[21]
			H	5.15/5.09	3.75	4.00	4.46	4.70/4.78		
	B	→4)-β-D-Gal*p*A-(1→	C	103.35/103.07	70.88	71.66	81.98/81.67	73.67	173.74	
			H	4.96/4.91	3.75	4.00	4.38	4.43		
	C	→4)-α-D-Gal*p*A	C	95.13	70.88	71.54	80.84	74.19	173.87	
			H	5.29	3.82	4.00	4.13	4.27		
	D	→4)-β-D-Gal*p*A	C	99.07/98.96	70.88	71.54	81.33	77.08	173.87	
			H	4.56/4.57	3.75	4.00	4.13	4.27		
	E	α-Ara*f*-(1→	C	110.37	81.33	77.76	85.10	64.01		
			H	5.25	4.33	4.06	4.29	3.73		
	F	→2,4)-α-D-Gal*p*A-(1→	C	102.43/101.96	79.47	73.21	80.84/81.33	71.54	173.62	
			H	5.20/5.15	3.98	4.21	4.43	4.00		
PZMP4	A	→3,4)-α-D-Gal*p*A-(1→	C	101.89	70.79/70.93	79.42	84.05	73.41/73.04	173.68/173.80	[22]
			H	4.87	3.74	3.87	4.04	5.06/5.00		
	B	α-D-Gal*p*A-(1→	C	102.36	71.45	70.79	71.59	74.21	178.21	
			H	5.00	3.91	3.63/3.66	3.96	4.32		
	C	→2)-α-L-Rha*p*-(1→	C	102.36	84.19	71.45	74.85	71.60		
			H	4.82	4.11/4.04	3.86	3.66	3.96		
	D	→3)-α-L-Ara*f*-(1→	C	110.24	81.61	86.77	83.74	63.96		
			H	5.00/5.05	4.20	3.94	4.02	3.62		
SAZMP3	A	→2,4)-α-L-Rha*p*-(1→	C	97.67	82.57	72.23	82.55	74.84	16.78	[24]
			H	5.21	3.74	4.08	3.68	3.19	1.22	
	B	→4)-α-D-Gal*p*A-(1→	C	99.16	69.67	69.06	78.09	71.51	175.54	
			H	5.03	3.67	3.96	4.38	4.70		
	C	→3)-β-D-Gal*p*-(1→	C	109.54	72.23	82.20	69.67	68.37	62.74	
			H	4.36	4.18	3.74	3.67	3.68	3.96	