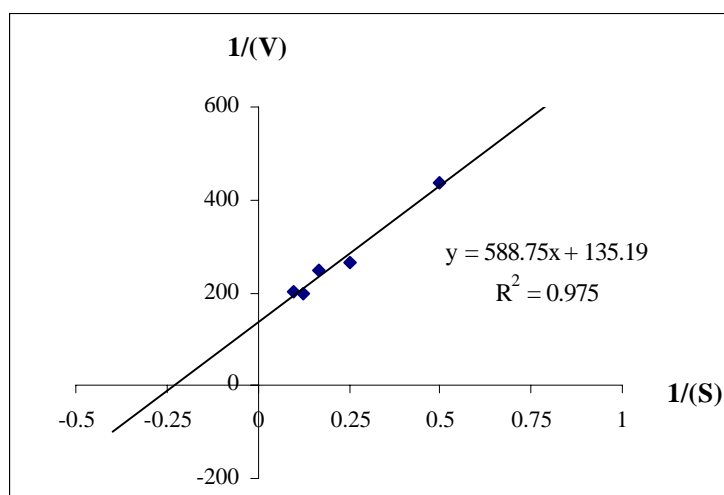


Appendix Table A4 Reaction rates of pJ12 on various barley β -glucan concentration at 50°C

[S] (mg/ml)	[V] (U/ml.min)	1/[S] (ml/mg)	1/[V] (ml.min/U)
10	0.0049	0.1000	204.08
8	0.0051	0.1250	196.08
6	0.0040	0.1667	250.00
4	0.0038	0.2500	263.06
2	0.0023	0.5000	434.78



Appendix Figure A8 Lineweaver – Burk plots of J2 with barley β -glucan as the substrate (50 mM citrate buffer pH 6.0, 50°C)

The Michealis – Menten equation;

$$\frac{1}{V} = \frac{K_m}{V_{max}} \cdot \frac{1}{S} + \frac{1}{V_{max}} \quad (1)$$

As relation between 1/[S] and 1/[V] of purified J1 from Appendix Figure A6

$$\frac{1}{[V]} = 179.62 \cdot \frac{1}{[S]} + 117.49 \quad (2)$$

Thus;

$$\frac{1}{V_{max}} = 117.49 \quad \text{ml.min/U}$$

$$V_{max} = 8.5114 \times 10^{-3} \quad \text{U/ml.min} \quad (3)$$

From (1) and (2)

$$\frac{K_m}{V_{max}} = 179.62 \quad \text{ml/mg}$$

From (3)

$$\frac{K_m}{8.5114 \times 10^{-3}} = 179.62 \quad \text{mg/ml}$$

Thus

$$K_m = 1.5288 \quad \text{mg/ml}$$

Therefore, K_m and V_{max} determination of the purified J1 from Lineweaver – Burk plots were 1.53 mg/ml and 8,511 μ U/ml.min, respectively.

Same as the purified J1, relation between 1/[S] and 1/[V] of the partial purified J2 from Appendix Figure A8.

$$\frac{1}{[V]} = 588.75 \cdot \frac{1}{[S]} + 135.19 \quad (4)$$

Thus; $V_{\max} = 7.397 \times 10^{-3} \text{ U/ml.min} \quad (5)$
And $K_m = 4.3550 \text{ mg/ml}$

Therefore, K_m and V_{\max} determination of the partial purified J2 from Lineweaver – Burk plots were 4.36 mg/ml and 7,397 μ U/ml.min, respectively.

6. Oligosaccharide analysis

The oligosaccharide products on TLC was analyzed in quantity by GeneTools program version 3.06.04 (Syngene, USA) and result was shown in Appendix Figure A9-11.

