Results shows that:

1. XynB osmotic shock supernatant has bleaching effect to kraft pulp.
2. XynB treatment of pulp cannot boost bleaching effect of Sodium hypochlorite, possibly due to high ACTIVATOR concentration.

1. Make pulp from kraft, dry to make semi-finished product for further use
2. XynB solution attained from osmotic shock supernatant
3. Prepare Sodium hypochlorite solution with an active chloride content of 34.0 g/L - 46.0 g/L as chloride containing chemical decolorizer, designated ”ACTIVATOR”
4. Disperse 0.01g semi-finished product in each tube, add H_2O and XynB solution of each tube according to Table 1
5. Mix contents of each tube, incubate at 60℃, 200 rpm overnight
6. For each tube of Group A, centrifuge, discard supernatant. Add H2O to 1ml, centrifuge, discard supernatant to wash away XynB. Wash for another time, add ACTIVATOR to each tube according to Table 1
7. Incubate at 60℃, 200 rpm for 30 min
8. Add 360 μL of each sample from Group A and Group B to a 96 well plate. Each sample is paralleled 3 times.
9. Use Tanon 3500 gel image system, maximum diaphragm, exposure time = 0.2s to collect image of 96 well plate under white field
10. Use accessory painting program of windows 8 (i.e. mspaint.exe) to collect central point of each well, use *color picker* tool to measure light intensity profile of each well, data summarized in Table 2

Group A	A1	A2	A3	A4	A5
XynB (mL)	0	0.2	0.4	0.6	0.8
H_2O (mL)	Add to 1				
ACTIVATOR(μL)	5				

Group B	B1	B2	B3	B4	B5
XynB (mL)	0	0.2	0.4	0.6	0.8
H_2O (mL)	Add to 1				

Table 1

Samples	Average light intensity
A1	28.0
A2	27.7
A3	29.0
A4	29.0
A5	25.3
BLANK	7.3
B1	22.0
B2	22.3
B3	25.3
B4	24.0
B5	27.3

Table 2