

Supplementary material

Supplementary Table 1. Minimum inhibitory concentration (MIC) of sappan wood ethanolic extract and mouthwash from sappan wood extract

Sample	Observation result	
	<i>S. mutans</i>	<i>P. aeruginosa</i>
Extract 1 %	-	+
Extract 3 %	-	-
Extract 5 %	-	-
Mouthwash with 1 % sappan wood extract	-	+
Mouthwash with 3 % sappan wood extract	-	-
Mouthwash with 5 % sappan wood extract	-	-
Chlorhexidine 0.2 % (K ⁺)	-	-
Commercial mouthwash containing chlorhexidine 0.2 % (K ⁺)	-	-
Bacterial suspension (K ⁻)	+	+

Note: - No bacterial growth, + Presence of bacterial growth.

Supplementary Table 2. Organoleptic observations of sappan wood mouthwash for six cycles

Sample	Parameter	Cycle		References standard
		0	6	
F ₀	Scent	None	None	Scent: None Colour: Clear Taste: Sweet Form: Solution [35]
	Colour	Clear	Clear	
	Taste	Sweet	Sweet	
	Form	Solution	Solution	
F ₁	Scent	Typical herbal	Typical herbal	Scent: Typical extract Colour: Brown Taste: Slightly sweet Form: Solution [16]
	Colour	Brown	Brown	
	Taste	Slightly sweet	Slightly sweet	
	Form	Solution	Solution	
F ₂	Scent	Typical herbal	Typical herbal	Scent: Typical extract Colour: Brown Taste: Slightly sweet Form: Solution [16]
	Colour	Brown	Brown	
	Taste	Slightly bitter	Slightly bitter	
	Form	Suspension	Suspension	
F ₃	Scent	Typical herbal	Typical herbal	Scent: Typical extract Colour: Brown Taste: Slightly sweet Form: Solution [16]
	Color	Brown	Brown	
	Taste	Bitter	Bitter	
	Form	Suspension	Suspension	

F₀: Mouthwash base without extract, F₁: Mouthwash with 1 % sappan wood extract, F₂: Mouthwash with 3 % sappan wood extract, F₃: Mouthwash with 5 % sappan wood extract.

Supplementary Table 3. Homogeneity observations of sappan wood mouthwash for six cycles

Sample	Parameter	Cycle		References standard [40]
		0	6	
F ₀	Before shaking	Homogenous	Homogenous	Homogenous
	After shaking	Homogenous	Homogenous	
F ₁	Before shaking	Homogenous	Homogenous	
	After shaking	Homogenous	Homogenous	
F ₂	Before shaking	Not Homogenous	Not Homogenous	
	After shaking	Homogenous	Homogenous	
F ₃	Before shaking	Not Homogenous	Not Homogenous	
	After shaking	Homogenous	Homogenous	

F₀: Mouthwash base without extract; F₁: Mouthwash of sappan wood extract 1 %; F₂: Mouthwash of sappan wood extract 3 %; F₃: Mouthwash of sappan wood extract 5 %; Vo: Mouthwash initial volume; Vu: Volume of supernatant formed after sedimentation; F: sedimentation value.

Supplementary Table 4. Sedimentation observations of sappan wood mouthwash for six cycles

Sample	Parameter	Cycle							Indonesian pharmacopoeia 6 th Standard [43]
		0	1	2	3	4	5	6	
F ₀	Vo (mL)	10	10	10	10	10	10	10	F = 1 or F close to 1
	Vu (mL)	-	10	10	10	10	10	10	
	F (mL)	-	1	1	1	1	1	1	
F ₁	Vo (mL)	10	10	10	10	10	10	10	
	Vu (mL)	-	10	10	10	10	10	10	
	F (mL)	-	1	1	1	1	1	1	
F ₂	Vo (mL)	10	10	10	10	10	10	10	
	Vu (mL)	-	6.2	6.6	6.8	7.2	7.4	7.4	
	F (mL)	-	0.62	0.66	0.68	0.72	0.74	0.74	
F ₃	Vo (mL)	10	10	10	10	10	10	10	
	Vu (mL)	-	5.4	5.8	6.2	6.4	6.6	6.8	
	F (mL)	-	0.54	0.58	0.62	0.64	0.66	0.68	

F₀: Mouthwash base without extract; F₁: Mouthwash of sappan wood extract 1 %; F₂: Mouthwash of sappan wood extract 3 %; F₃: Mouthwash of sappan wood extract 5 %; Vo: Mouthwash initial volume; Vu: Volume of supernatant formed after sedimentation; F: sedimentation value.

Supplementary Table 5. Redispersion test of sappan wood mouthwash for 6 cycles

Sample	Parameter	Cycle							Indonesian pharmacopoeia 6 th Standard [43]
		0	1	2	3	4	5	6	
F ₀	Rt (s)	0	0	0	0	0	0	0	< 30 s
F ₁	Rt (s)	0	0	0	0	0	0	0	
F ₂	Rt (s)	0	2	2	2	2	2	2	
F ₃	Rt (s)	0	2	2	2	2	2	2	

F₀: Mouthwash base without extract; F₁: Mouthwash of sappan wood extract 1 %, F₂: Mouthwash of sappan wood extract 3 %, F₃: Mouthwash of sappan wood extract 5 %, Rt: Redispersion time.