

Table I. Inclusion and exclusion criteria of the clinical study

Inclusion criteria	Exclusion criteria
Male and female	
Age range, 11 – 14 years or 21 – 45 years	Long-term use (6 months prior to study enrollment) of antibiotics, phenytoin, cyclosporin, anti-inflammatory drugs, systemic corticosteroids, and calcium channel blockers
Class II Division 1 malocclusion, overjet < 10 mm, Pg-N per < 18 mm, ANB < 7°, SN-GoGn < 38°	Extreme skeletal Class II malocclusion, crossbite, overjet > 10 mm, Pg-N per > 18 mm, ANB > 7°, SN-GoGn > 38°
Have permanent dentitions at least from first molar to contralateral first molar, and need canine retraction for 3 mm or more	Presence of primary teeth, incomplete permanent dentition
No systemic disease	Systemic disease
No radiographic evidence of bone loss	Radiographic evidence of advanced bone loss
No history of periodontal therapy	Past periodontal disease on upper canines; past periodontal treatments during the 6-month period prior to study enrollment
Non-smokers	Current smokers
No gingivitis or untreated caries	Gingivitis and caries
No current active periodontal disease	Current periodontal disease
Probing depths < 4mm in all teeth	Probing depths > 4mm in any tooth
Good oral hygiene	Poor oral hygiene
Gingival Index ≤ 1	Gingival Index > 1
Plaque index ≤ 1	Plaque index > 1
English-speaking	Non-English Speaking