

## **Antioxidant activity of the herbal ingredients in traditional betel quid**

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Since ancient times, chewing of traditional betel quid (TBQ) is believed to strengthen teeth and gums and also control caries, periodontitis and bad breath. However, these effects are not scientifically elucidated yet. Since herbal ingredients are well documented to be rich in antioxidants which can scavenge free radicals involved in pathophysiology of many oral diseases, we analyzed the antioxidant activity of the TBQ and its individual ingredients.

TBQ prepared by mixing equal dry weights of its ingredients and the individual ingredients were extracted in ethyl acetate and tested for in vitro antioxidant activity using ferric reducing antioxidant power (FRAP) and DPPH radical scavenging activity.

Our results revealed that the antioxidant activity of TBQ is significantly higher than the sum of the antioxidant activities of individual ingredients (FRAP of TBQ = 1292.8±39.7 mmol/ml, sum of the individual ingredients = 204.5±9.5mmol/ml and DPPH radical scavenging activity as IC<sub>50</sub> of TBQ =83.5±1.04 µg/ml, sum of the individual ingredients 686.1 µg/ml±14.7) suggesting synergistic interactions among the individual ingredients in the TBQ.

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