

TITLE OF INVENTION

Oral fluid drug test kit for Betel Nut (Areca nut) parent drug Arecoline.

TECHNICAL FIELD OF THE INVENTION

This invention relates to the detection of the Betel Nut (Areca Nut) use through the parent drug Arecoline in drug test screening that may impact on an individual's faculties where they would be deemed 'under the influence' of a drug.

BACKGROUND

[0001] The chewing of the Betel Nut (Areca nut) is recognised for its frequent custom and cultural acceptance in parts of Melanesia notably Papua New Guinea; Australia's closest neighbour and recognised in parts of Asia and India.

[0002] Arecoline is found in Betel Nut. Arecoline is isolated from Betel Nuts and is an alkaloid natural product found in the areca nut, the fruit of the areca palm (Areca catechu). Other alkaloids found in Betel Nut include arecaidine, guvacine and guvacoline having an anti-muscarinic effect similar to Benzodiazepines drugs. Arecoline and Amphetamines have similar severity of dependence and stimulant effects.

[0003] Betel Nut is a recognised Drug according to the Australian Alcohol and Drug Foundation and advises that "there is no safe level of drug use" for Betel Nut.

[0004] Betel Nut is a prohibited substance in Australia yet can be imported for sale at retail outlets.

[0005] The use of Betel Nut alone produces a stimulant effect as a psychoactive substance with the potential to impair an individual's fitness for work; and can lead to serious adverse health effects.

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[0007] Most leading organizations in Australia and Papua New Guinea have strict policies in place to ensure drug-free workplace. These policies cover Betel Nut, in addition to alcohol, drugs of abuse and other drugs. Policy directives also state that unlawful manufacture, distribution, dispensation, possession or use of Betel Nut or dangerous drugs is prohibited on company premises or even whilst conducting company business off company premises.

[0008] The application of an oral fluid drug test kit for Betel Nut will support existing drug and alcohol testing procedures for organisations committed to providing a safe workplace for all its employees, contractors and visitors by managing and eliminating the health and safety risks that arise from the use, misuse or abuse of drugs and alcohol, which can affect an individual's fitness for work.

SUMMARY

[0001] The active ingredient in Betel Nut is Arecoline, which is a Schedule 4 poison (prescription only medicine) and therefore is illegal to possess or sell without proper authority.

[0002] Arecoline stimulates cultured cells above 0.1 microg/ml and is cytotoxic above 10 microg/ml.

[0003] The oral fluid drug test kit for Betel Nut would be incorporated into an existing test kit customized to suit work place applications i.e. a test strip to detect the presence of Arecoline and other alkaloids of Betel Nut. There are numerous amounts of drug testing kits specifically designed to suit Australian Standard 4760:2006 cut-off levels.

[0004] In a currently active clinical study being done jointly by the University of Guam and Cancer Centre of Hawaii, the cut-off level for betel nut biomarkers for Arecoline has been set as 60 ng/mL. This cut-off level for Australia will be comparably lower as the country has lower levels versus the rest of world in case of all other drugs. For example, the cut-off level for amphetamine urine testing in the United States is 500 ng/mL, whereas the cut-off level in Australia for the same drug is 300 ng/mL.