Yucatan miniature pigs weighing 16-20 kg were topically administered a single dose of an acetone/polymer skin coating (3 animals per sex) or acetone alone (1 animal per sex) for acute evaluation. Acetone levels in blood were evaluated at regular intervals between 0 and 4 hours. After a washout period, a subchronic study was performed, with twice daily dosing (minimum of 6 hours between applications) of each treatment group for 5 days per week for 7 weeks, to both abraded and unabraded skin sites. Blood was drawn at the beginning and the end of each week and acetone levels were quantified with gas chromatography and flame ionization detection. Clinical signs were monitored daily, 5 days/week. Body weights and food consumption were recorded weekly. Serum chemistry and hematologic parameters were evaluated at termination of the study. At necropsy, skin and major organs were collected, organs were weighed, and all tissues were processed for histopathological examination.

**RESULTS**

- No evidence of toxicity as determined by overt physical signs, body weight, food consumption, serum chemical or hematological analyses, organ weights, or gross pathological examination was seen with any of the treatment regimens.
- No perceptible elevation of acetone levels, or only slightly increased levels were observed after acute administration of any of the formulations tested. In addition, there was no evidence for elevated blood acetone levels after subchronic treatment.
- Histology showed that there were no significant microscopic differences between any treatment or control groups.

**ACETONE LEVELS**

Baseline (n=8) = <0.9 µg/ml
Acetone (n=2) = <6.0 µg/ml
Skin Coating (n=6) = <6.0 µg/ml
NOEL (humans) = >330 µg/ml

**CONCLUSION**

The results demonstrate that acetone alone or present in a mixture of acetone/polymer coating is non-toxic and non-irritating to skin following either an acute or subchronic administration in miniswine. Furthermore, there is no evidence that blood acetone concentrations ever reach levels that would be considered toxic to humans. Only minimal amounts of acetone are absorbed after topical application.

**REFERENCE**


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