

NMR Spectroscopy Confirms the Absence of Solanidine Alkaloids in *Solanum centrale* J.M. Black Fruit Extract

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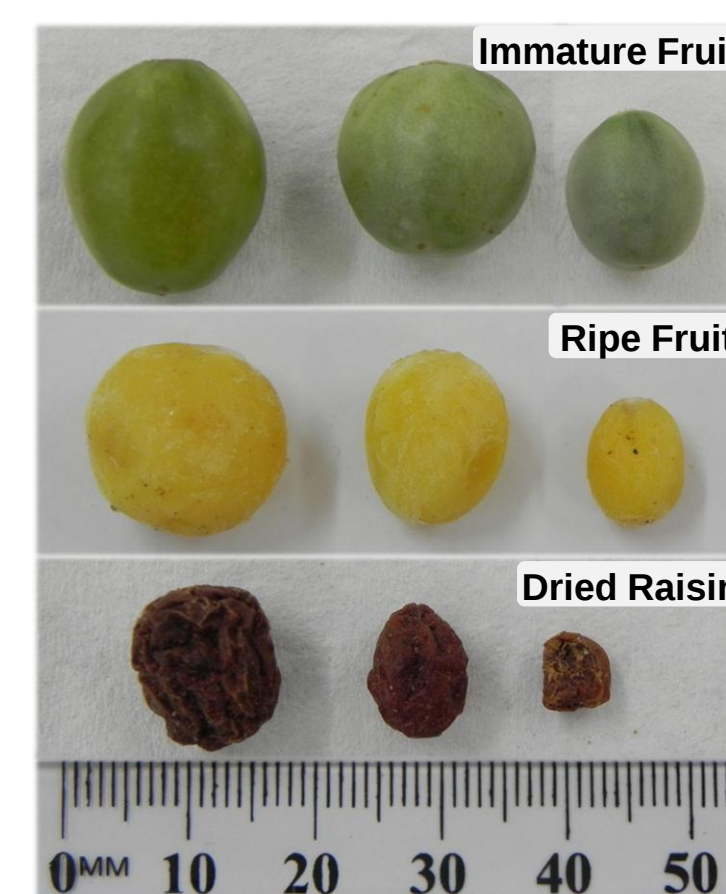
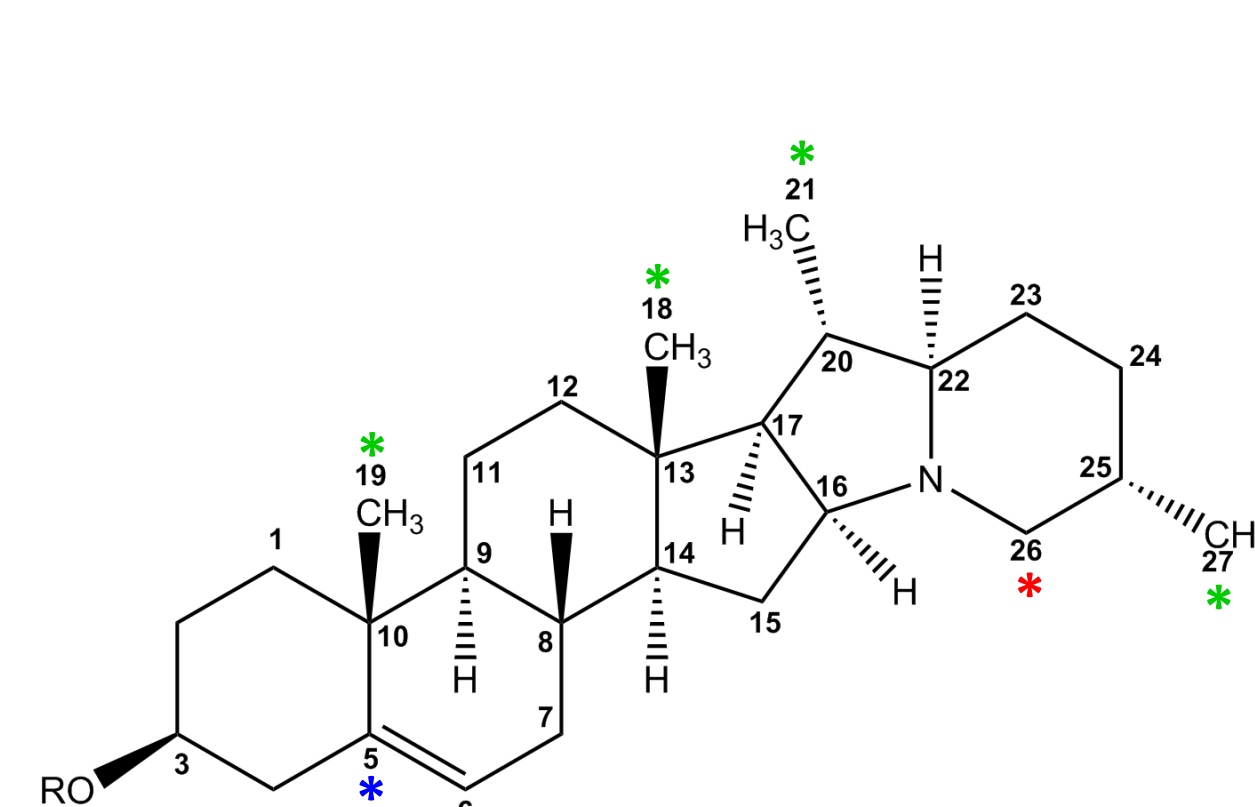
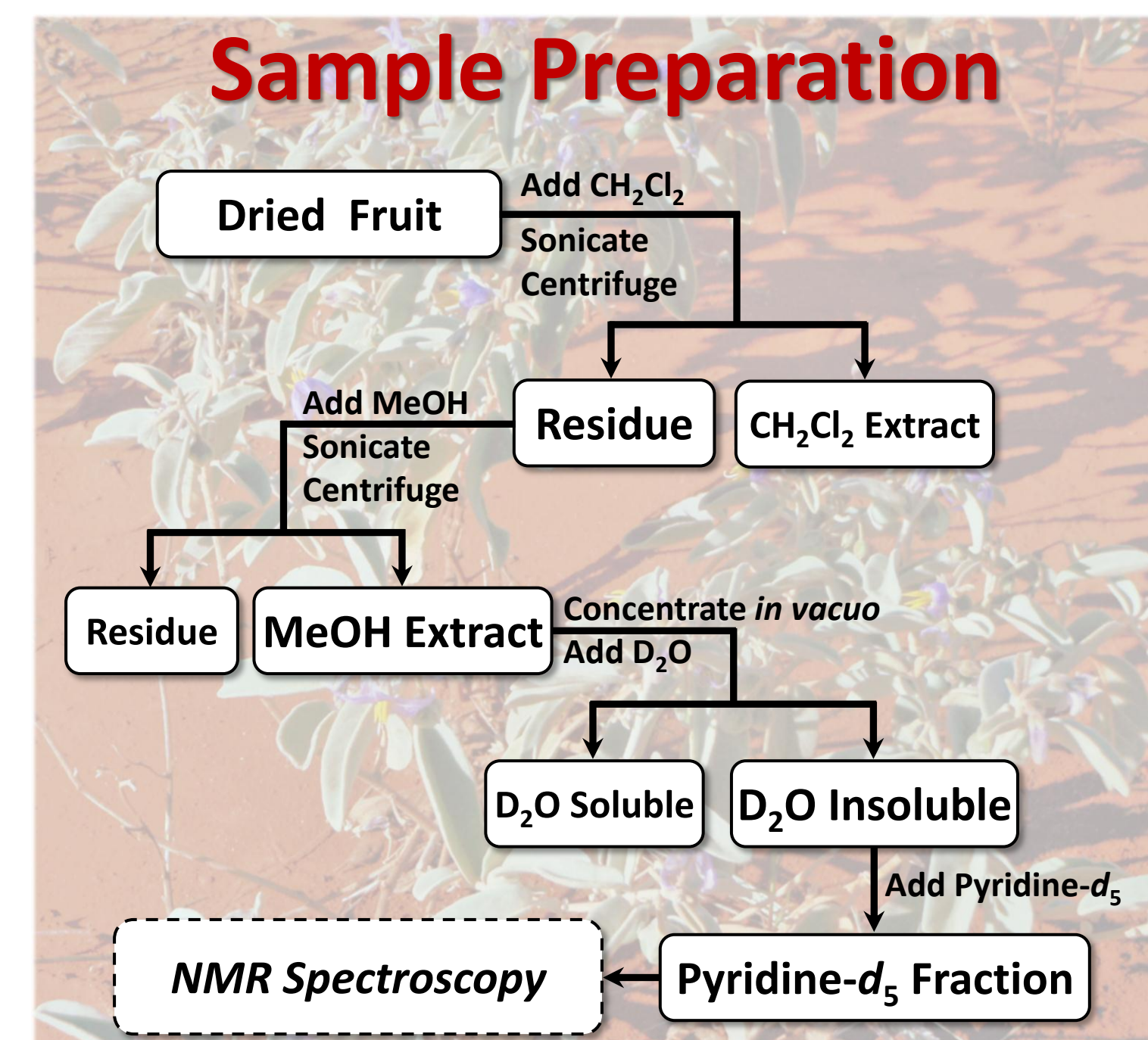
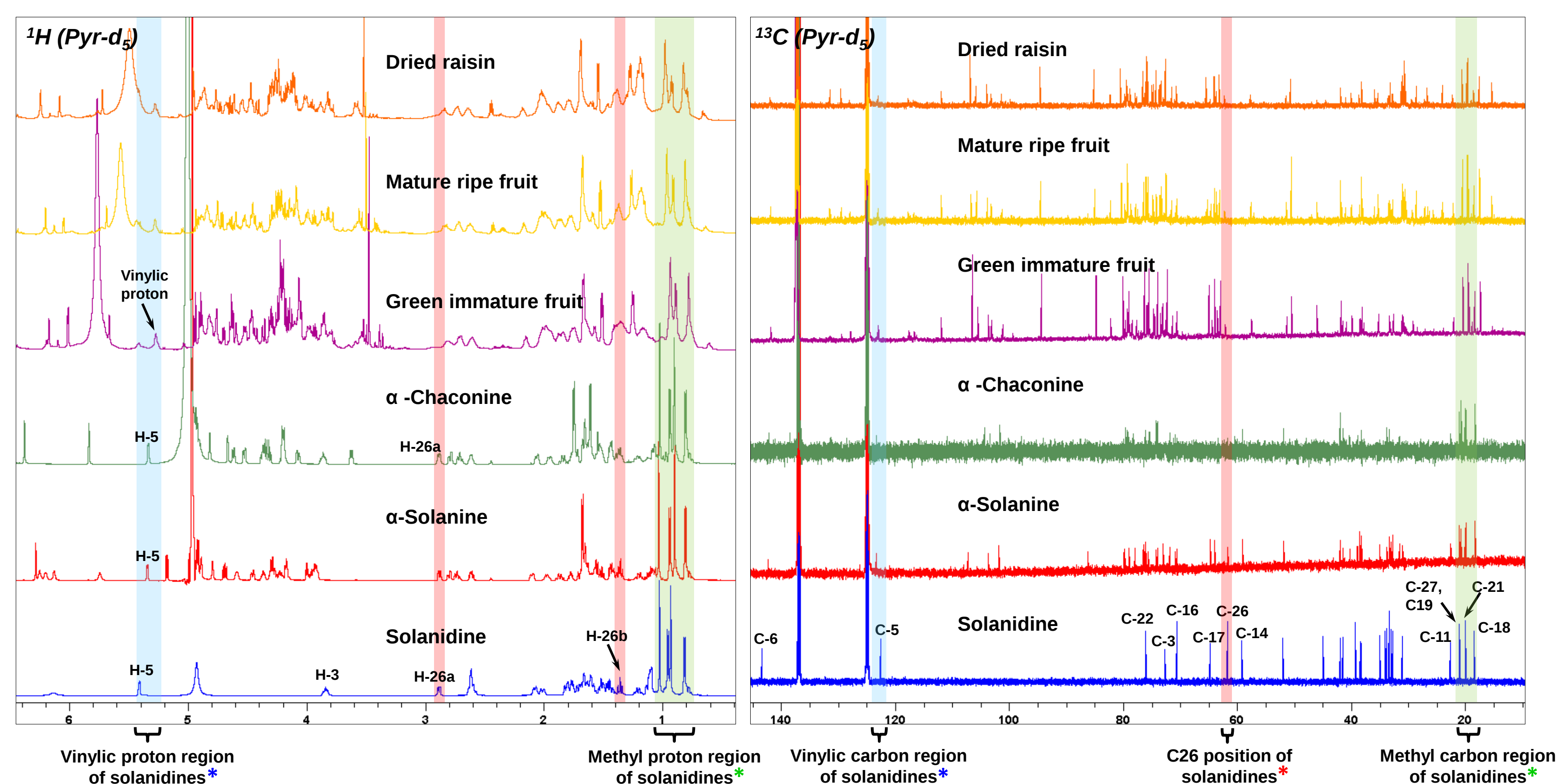
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Background

The Australian Bush Tomato (*Solanum centrale* J.M. Black) has long been a part of the tradition of the Indigenous people of Australia. It is being used as food and recently has found additional use in the food industry as a condiment. However, one of the concerns for its potential commercialisation is the suspected presence of poisonous alkaloids, solanidine and its glycosides. The toxicity associated with these alkaloids could severely compromise its food safety and thus, there is an urgent need to develop methods to confirm unequivocally the presence or absence of the solanidines in the Australian Bush Tomato.



Solanidine: R = H
 α-Solanine: R = α-L-Rhamnopyranosyl-(1→2)-O-[β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside
 α-Chaconine: R = O-[α-L-Rhamnopyranosyl-(1→2)-O-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]

Distinctive features of solanidines:

- Vinylic proton at C5
- Two methyl singlets (C18 and C19)
- Two methyl doublets (C21 and C27)
- Geminally coupled protons (2.9 and 1.4 ppm) directly correlated to a carbon at 60.6 ppm (C26, vicinal to nitrogen)

All these features are readily observed in ¹H-¹³C HSQC spectra presented here

Conclusion

- NMR spectral data confirms that solanidine and its glycoalkaloids are NOT present in *S. centrale* fruit extracts, regardless of fruit maturity.
- Spectral data do suggest the presence of other steroidal glycoside(s) in the *S. centrale* extracts.

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