

Cherokee Traditional Medicine: Natural Products from *Nyssa sylvatica*

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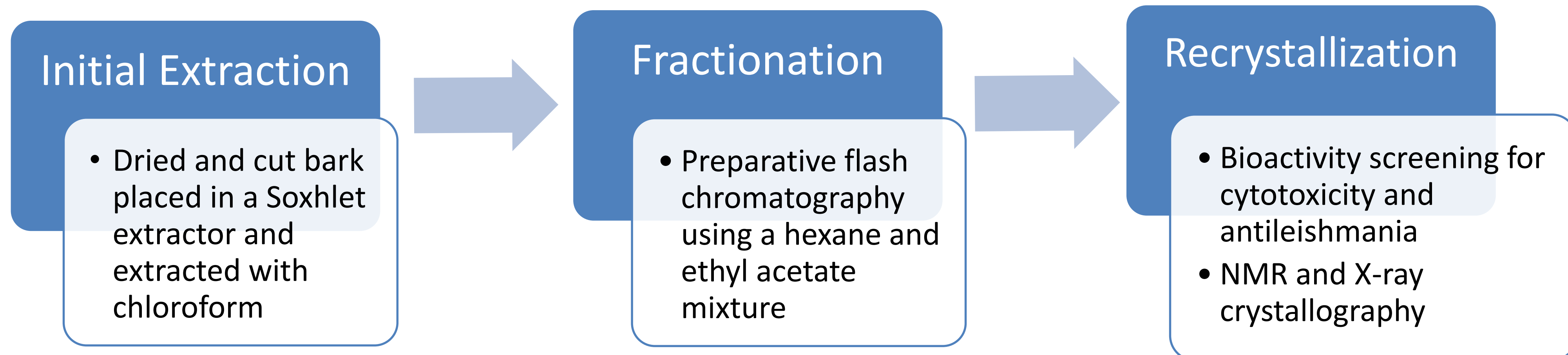
Introduction

The Cherokee, in addition to many other Native American tribes, used natural products to cure a variety of ailments. *Nyssa sylvatica* is a species commonly known as the blackgum tree. The bark of this tree was used to treat fevers, cancer, gonorrhea, wounds, urinary tract infections, and intestinal worms. Following their usage, the Natural Products Research Group sought to investigate the bioactivity of this plant and determine if antibacterial, antifungal, cytotoxic, and/or antiparasitic activities exist.

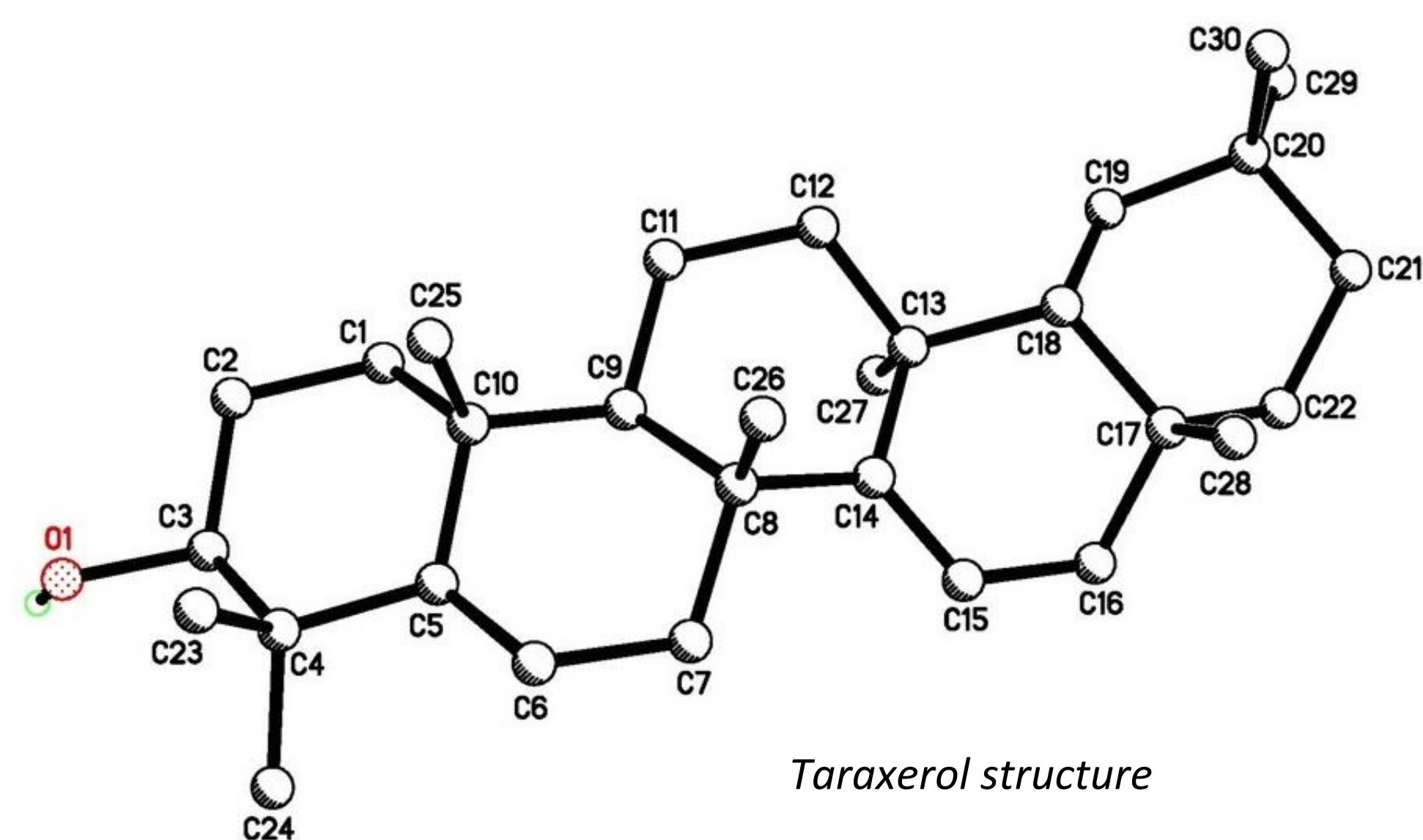


Nyssa sylvatica tree and bark.

Methods



Results



- The extracts were tested for cytotoxic and anti-leishmanial activity. The crude extracts showed promising cytotoxic activity on MDA-MB-231 human breast tumor cells. However, once the extracts were further fractionated, no fractions showed cytotoxicity on any cell lines.
- Fractions were sent to a lab in Brazil for antiparasitic screening, but results have not been sent back yet.
- Identification through NMR and X-ray crystallography has shown fractions of friedelin, taraxerol, and *epi*-taraxerol.
- Friedelin: a triterpene shown to have anti-inflammatory, analgesic, and antipyretic effects
- Taraxerol and *epi*-taraxerol: Both terpenoids that have been shown to have cytotoxic activity

Conclusions

Based on the Cherokee uses for the bark, it is believed that anti-parasitic activity should be present. If the anti-leishmanial assays return positive results, it is actually better that no cytotoxic activity came to be, as the compounds should kill parasites and not mammalian cells. More research needs to be conducted for full results.

Acknowledgements

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