Kratom, Umbilical Cord Tissue, Qualitative

Kratom is a botanical extract derived from *Mitragyna speciosa*, an evergreen tree found throughout Southeast Asia. When used regularly, dependency and withdrawal are possible. Some case studies also suggest an association between use of kratom during pregnancy and neonatal abstinence syndrome (NAS). Testing to identify fetal exposure to kratom may be useful to inform patient management, particularly in cases of NAS.

The alkaloid content of kratom can vary significantly based on several factors (eg, country of origin), though mitragynine (MG) is thought to be a highly prevalent alkaloid. Speciociliatine (SC) is another useful biomarker of exposure to kratom. Including two unique analytes increases the likelihood of detecting an exposure.

Test Interpretation

Analytic Sensitivity/Specificity

Analysis for two kratom biomarkers improves the sensitivity and specificity of testing. Refer to analyte cutoff concentrations below.

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Cutoff Concentrations (ng/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitragynine</td>
<td>0.08</td>
</tr>
<tr>
<td>Speciociliatine</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Results

<table>
<thead>
<tr>
<th>Result</th>
<th>Interpretation</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>Concentrations of the analyte(s) in question met or exceeded the established cutoff</td>
<td>Suggests maternal kratom use and fetal exposure during pregnancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A positive result is not predictive of neonatal outcomes</td>
</tr>
</tbody>
</table>
### Result

| Not detected | Concentrations of the analyte(s) in question were below the established cutoff | Does not exclude the possibility of maternal kratom use and fetal exposure during pregnancy |

### Limitations

- The pattern and frequency of kratom use during pregnancy cannot be determined by this test.
- A negative result does not exclude the possibility of kratom use during pregnancy.
- Detection of kratom alkaloids in umbilical cord tissue depends on the extent of maternal use, as well as stability, the unique characteristics of alkaloid deposition in umbilical cord tissue, and the performance of the analytic method used.

### References


### Related Information

**Newborn Drug Screening - Meconium and Umbilical Cord Tissue**

**Newborn Drug Testing Algorithm**

ARUP Laboratories is a nonprofit enterprise of the University of Utah and its Department of Pathology. 500 Chipeta Way, Salt Lake City, UT 84108

(800) 522-2787 | (801) 583-2787 | aruplab.com | arupconsult.com

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Client Services - (800) 522-2787