OPS Diagnostics offers simple, fast and economical plant DNA isolation solutions.

**Synergy™ 2.0 Plant DNA Extraction Kit**  
Product No. SYNP 02-100-02

For researchers looking to achieve high-quality results in a rapid manner without the use of carcinogenic chloroform found in traditional CTAB protocols, the Synergy™ 2.0 Plant DNA Extraction Kit utilizes a novel chemistry to quickly and effectively isolate DNA from a variety of plant species. Results have shown that bead beating samples in 2 ml pre-filled Homogenization Tubes containing the Synergy™ proprietary grinding matrix and Plant Homogenization Buffer is more effective than traditional CTAB protocols in eliminating polysaccharides and polyphenols from even the toughest of plants.

Each Synergy™ 2.0 Plant DNA Extraction Kit includes 100 pre-filled Homogenization Tubes, 100 Silica Spin Columns, RNase A Solution and Plant Homogenization Buffer.

DNA successfully extracted from plants including: Anthurium, Corn, Cotton, Grape, Pine Needles, Rapeseed, Rice, Rye, Sorghum, Soybean, Sunflower, and Wheat

**CTAB Extraction Buffer**  
Product No. CEB 500-02

For researchers using traditional extraction methods but seeking a cost-effective way to reduce the time associated with purchasing reagents and formulating homegrown buffers, OPS Diagnostics offers pre-packaged CTAB Extraction Buffer. This buffer eliminates polysaccharides and polyphenols generated during the extraction process by employing the cationic detergent, CTAB, and the polyphenol binding agent, PVP.

Key Features
**Synergy™ 2.0 Plant DNA Extraction Kit**
- Non-hazardous, rapid method for DNA extraction
- No manual disruption of samples or chloroform necessary
- Sample processing time 45 minutes or less
- Cellular debris and PCR inhibitors bind to the Synergy™ grinding matrix during centrifugation
- Higher DNA yields of equal or better purity compared to other commercially-available kits and CTAB protocols

**CTAB Extraction Buffer**
- Cost efficient
- Quality-control tested for sterility and consistency
- Higher DNA yield of equal or better purity when compared to homegrown CTAB formulations

**Related Products**

<table>
<thead>
<tr>
<th>Item</th>
<th>Product No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica Spin Columns</td>
<td>SSC 100-01</td>
</tr>
<tr>
<td>CTAB Extraction Buffer, 125 ml</td>
<td>CEB 125-01</td>
</tr>
</tbody>
</table>

OPS Diagnostics’ products are intended for research purposes only; not for clinical use.
# DNA Isolation Protocol

## Summary

<table>
<thead>
<tr>
<th><strong>CTAB Method</strong></th>
<th><strong>Commercial Kit A</strong></th>
<th><strong>Synergy™ 2.0</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>11 steps total (96 min)</td>
<td>10 steps total (57 min)</td>
<td>8 steps total (43 min)</td>
</tr>
<tr>
<td>4 centrifuge steps</td>
<td>8 centrifuge steps</td>
<td>5 centrifugation steps</td>
</tr>
</tbody>
</table>

### CTAB Method
- Grind sample with LN2 (10 min)
- Add CTAB Buffer and RNase A Solution, Incubate at 60°C (30 min)
- Centrifuge sample and extract supernatant (10 min)
- Add chloroform, vortex and centrifuge (5 min)
- Extract upper phase; add chloroform, vortex and centrifuge (5 min)
- Re-extract upper phase, add isopropanol, vortex and incubate at -20°C (15 min)
- Centrifuge to pellet DNA (10 min)
- Wash pellet with 70% ethanol (2 min)
- Repeat ethanol wash (2 min)
- Dry pellet in SpeedVac (5 min)
- Re-suspend pellet in TE Buffer (2 min)

### Commercial Kit A
- Grind sample with LN2 (10 min)
- Add lysis buffer and incubate at 65°C (15 min)
- Add buffer, incubate on ice and centrifuge (12 min)
- Add supernatant to clarification column and centrifuge (3 min)
- Mix filtrate and new buffer, transfer to spin column and centrifuge (3 min)
- Add buffer to column and centrifuge (3 min)
- Apply wash buffer to column and centrifuge (3 min)
- Repeat washing step and centrifuge (3 min)
- Add elution buffer and centrifuge (3 min)
- Repeat elution step and centrifuge (2 min)

### Synergy™ 2.0
- Add sample and Plant Homogenization Buffer to Synergy™ Homogenization Tube, and bead beat (2 min)
- Centrifuge and extract supernatant (5 min)
- Add RNase A Solution and incubate at 37°C (15 min)
- Add isopropanol and incubate at -20°C (15 min)
- Transfer solution to spin column and centrifuge (2 min)
- Wash column with 70% ethanol and centrifuge (1 min)
- Repeat washing step and centrifuge (1 min)
- Elute from spin column, with water or TE Buffer, and centrifuge (2 min)