# MPBio FastDNA SPIN Kit (#116540600-CF)

This extraction kit is used to extract DNA from dried plant tissue (plant specimens have usually already been visually identified to a certain taxonomic level by a botanist.) Within the Kartzinel lab, we use this kit to extract plant DNA from specimens to build local plant reference libraries for DNA metabarcoding studies.

## Lab specific notes for preparing plant specimens for extraction


1. 24 samples can be extracted at a time. It is easier if you keep all of the samples in chronological order.
    - Make note of any duplicate ID numbers. Samples are sometimes accidentally given the same ID number in the field. In the case of duplicates, consider adding a letter to the label of one sample (e.g., if there are two specimens labeled “YNP_HA710”, consider leaving one as “YNP_HA710” and labeling the other “YNP_HA710_B.”
2. Set up your lab notebook with the columns:
    - Sample ID
    - Extraction Number (#1-24)
    - Characteristics
    - Notes
3. Fill in “Sample ID” and “Extraction Number” for each of your specimens.
4. Using a sterile technique (and tweezers if necessary), add about the same amount of plant tissue you’d find on a lawn clover (~3-hole punches of area) to a Lysing Matrix A tube. For grassy/stem-y plants, break up the plant into several smaller pieces by tearing the sample apart with tweezers or cutting with fine-precision scissors before adding it to the tube.

    - Label both tube cap and tube side of Lysing Matrix A tube with Extraction Number (#1-24) in case marker is smudged during lysing step
    - Make sure that there is a ceramic bead in the Lysing Matrix A tube. These go missing sometimes; there are replacements in the extraction kit.
        - The plant tissue can become statically charged and fly away from your tweezers. Be aware of any plant material that falls somewhere outside of the tube. Put stray plant bits in the trash – don't put them in your tube unless you are certain that the surface it landed on is clean
        - Never put stray plant material in a tube unless you are certain that it is the correct sample
        - Working on a fresh Kimwipe for each sample can help to prevent stray plant bits from accumulating on working surface
5. Wipe down tweezers between each specimen using 70% ethanol and a Kimwipe (the same Kimwipe can be used for no more than 6 samples).
6. For each specimen, write down the characteristics of the sample in your lab notebook (e.g. brittle, tough, grassy, waxy, hairy etc.) Also take note of indicators that a sample was not properly dried (e.g., signs of mold, sample is very flexible/non-brittle, etc.)
7. Mark the sample's envelope with a checkmark and the date to indicate that this sample has been extracted.
8. Repeat steps 4 to 7 for all of your specimens.
9. Once finished, replace the specimen envelopes in chronological order

**Lab specific notes for MPBio FastDNA SPIN Kit**

The following specifications refer to parameters and adjustments to the manufacturer's protocol, available here: MPBio FastDNA SPIN Kit

- Step 3: After homogenizing, let incubate at room temperature for 1 hour before continuing.
- Step 4: Centrifuge for 10 mins.
- Step 5: Use 750 uL of supernatant.
- Step 10: Replace catch tube with recovery tube.