

Please remember that you need to discuss your needs with the MRC staff first, who will book the appropriate amount of time on the instruments for you via iLab.

EPR Sample Preparation

1. **Maximum volume: 4 cm long in a 4 mm EPR tube (approximately 500 μ l)**
This is critical for low temperature experiments.
2. **Solvent choice:** Polar solvents (such as H₂O) absorb microwaves; therefore, **non-polar solvents** are strongly preferred for EPR experiments at room temperature. For low temperature experiments, it is critical that the solvent or mixture of solvents that are selected form a 'glass' upon freezing. Therefore, when preparing samples for low temperature experiments, it is mandatory that you to consult the MRC staff while performing comprehensive literature searches. Obviously, your sample needs to be very completely soluble in the selected solvent to avoid aggregate formation, which is problematic for EPR experiments.
3. **Air sensitivity:** the vacuum created at low temperatures cause atmospheric air to be sucked in your EPR tube; therefore, please discuss proper sealing procedures with the MRC staff if your samples are air sensitive.
4. **Simulations:** Multiple EPR-active species in a single sample tube result in very complicated spectra that may be very challenging or even impossible to simulate. Therefore, please do your best to limit your sample to a single EPR-active species. If linewidth and quantitative information are sought, it is critical that the sample be evacuated to remove paramagnetic oxygen which is EPR sensitive, and may cause line broadening and decreases the lifetime of other EPR species. Evacuating EPR samples requires a special vacuum line and sealing infrastructure, please consult the MRC staff or your PI if this is of paramount importance to your project.