

## ex-vivo PPS3 - Pepric Particle Spectrometer

The ex-vivo PPS **quantifies magnetic particles**:

SPIO, USPIO, MNP, target specific iron oxide particles and magnetic contrast agents, magnetic drug carriers, particles for hyperthermia and thermo-ablation; and pre-labeled cells, therapeutic cells, stem cells.

**Complementing pre-clinical MRI** with supporting quantitative data for **molecular imaging** and **molecular diagnostics**:

Combined analysis with PPS and MRI offers the solution for accurate and quantitative determination of the distribution of particles and labeled cells. The PPS enables to study the pharmacokinetics of cell and particle therapies and diagnostics.

Blood clearance time, cell and particle migration, saturation and clearance of target tissue, saturation dose, optimal dose repetition time, efficacy of particle coating for targeting, ...

**Instant** quantitative results in minutes time, no post-processing of spectra is required.

Direct quantification:

**No disturbance** from iron molecules naturally present in blood or liver;

All **organ tissues** and raw **blood** samples can be analysed, also lung samples complementing MRI images.

Avoid sampling errors and win time since **no sample preparation or manipulation** of blood or tissue is required.

### Key Features include:

- Instant quantitative results
- Direct and selective measurement
- No sample preparation required, eliminating manipulation errors
- Non-destructive, tissues are conserved for further biochemical analysis
- Non-invasive for labeled cells, cells remain viable and keep their functionality
- MRI compatible Data.
- Easy to Use, minimal Hands-on

### Ex-vivo analysis with PPS

Pepric first commercial platform is the PPS (Pepric Particle Spectrometer) for analysis of magnetic iron oxide nanoparticles in blood and tissues, ex-vivo or in-vitro. The PPS measures the total amount of magnetic labels contained in the organ or blood sample, allowing to reconstruct the overall distribution of the nanolabels administered to the animal.

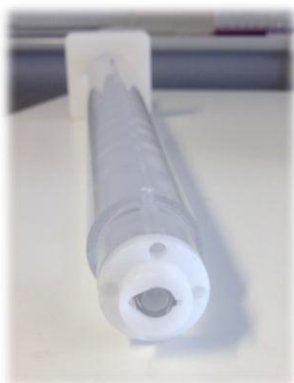
The Pepric Particle Spectrometer 'PPS' is based on a direct and selective detection method pEPR 'particle Electron Paramagnetic Resonance'. When the quantitative pEPR method is combined with MRI for accurate location of the magnetic nanolabels, it offers the solution for quantitative distribution studies.

The PPS is used for blood analysis or tissue analysis without sample preparation. Whole blood or unprepared tissue samples are put directly in sample tubes. Today PCR tubes with a sample content of about 150 µL are inserted into a sample holder. This sample holder is moved into the measurement module. The amount of particles contained into the sample is displayed within a few seconds on the read out and controlling computer.

## PPS3-V2



Biological samples are contained preferably into 200 $\mu$ L PCR tubes since the sample holder is made compatible with these PCR tubes. The sample holder can slide into the coil box, positioning the sample accurately in the center of the transceiver coils.



## PPS3-V2: Optimal installation

Best results with the PPS3-V2 are obtained in an air conditioned room with temperatures not exceeding 22°C.

The detection and quantification instrument can be plugged in to the standard primary AC power supply circuit (220-230V), and requires no additional gas or liquids supply neither for operation nor cooling.

Safety: the PPS3-V2 complies with IEC 61010-1 (Electrical) and with ICNIRP (Magnetic field)

EMC - Emission: The PPS3-V2 complies with IEC/EN 61000-6-1 (Class A) / IEC CISPR 11 / EN 55011 Class A, with exclusion of the radiated EM field at 300MHz.

EMC - Immunity: The PPS3-V2 complies with IEC/EN 61000-6-2 (Criteria A) / IEC 61326 Criteria A, with exclusion of the conducted or radiated EM field at 300MHz.

Additional features or product optimizations for the PPS3 can be implemented upon request.