

## Supplementary Material

### **Ambient ionisation mass spectrometry for lipid profiling and structural analysis of oocytes, preimplantation embryos and stem cells**

*Christina R. Ferreira<sup>A,F</sup>, Alan K. Jarmusch<sup>A</sup>, Valentina Pirro<sup>A</sup>, Clint M. Alfaro<sup>A</sup>, Andres F. González-Serrano<sup>B,E</sup>, Heiner Niemann<sup>B</sup>, Matthew B. Wheeler<sup>C</sup>, Rathnaweera A. C. Rabel<sup>C</sup>, Judy E. Hallett<sup>D</sup>, Rebecca Houser<sup>D</sup>, Annemarie Kaufman<sup>D</sup> and R. Graham Cooks<sup>A</sup>*

<sup>A</sup>Department of Chemistry and Center for Analytical Instrumentation Development, Purdue University, 207 South Martin Jischke Drive, West Lafayette, IN 47907, USA.

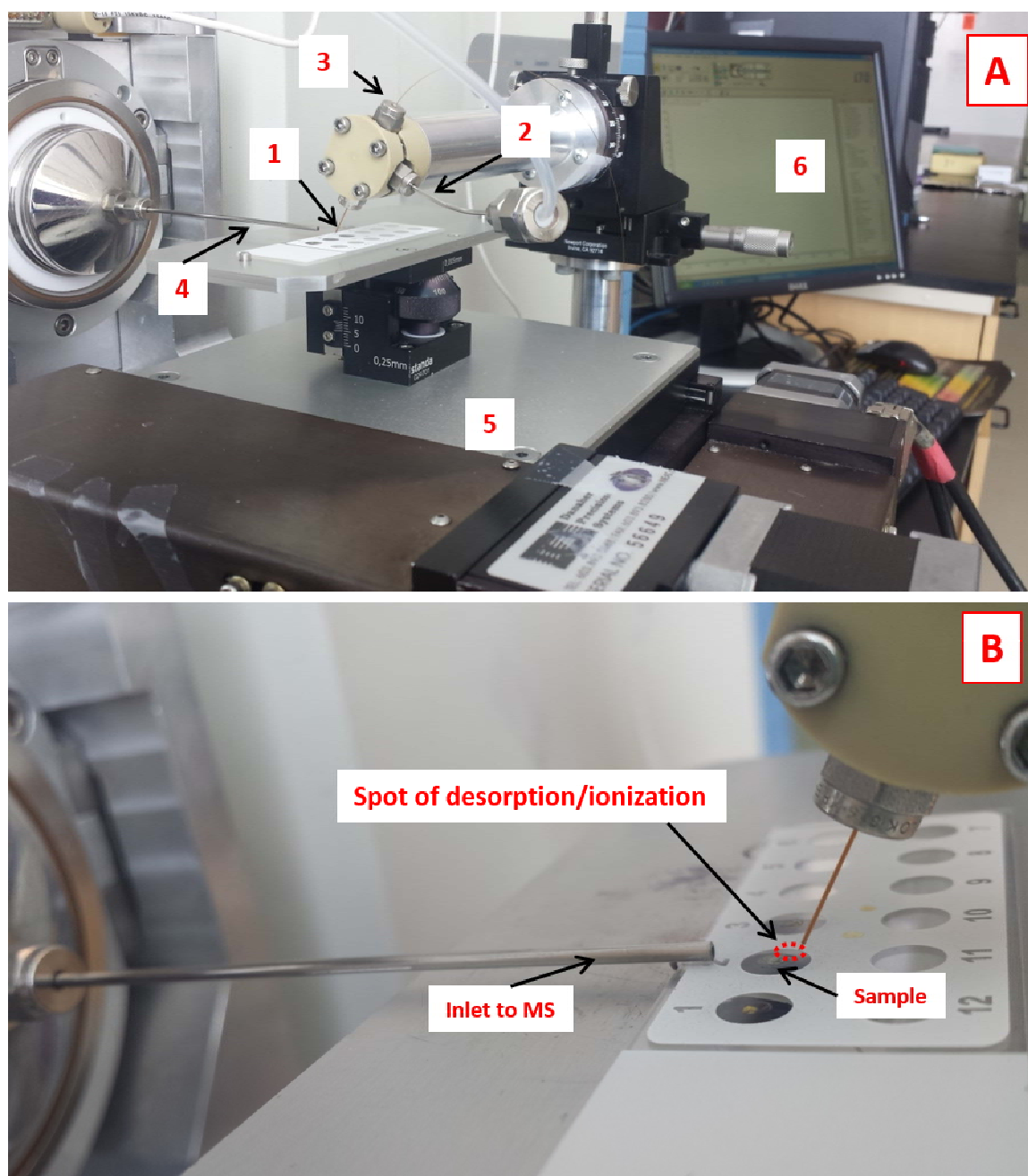
<sup>B</sup>Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Höltystr. 10, 31535 Neustadt, Germany.

<sup>C</sup>Laboratory of Stem Cell Biology and Engineering, Department of Animal Sciences and Institute for Genomic Biology University, University of Illinois at Urbana-Champaign, 1207 W. Gregory, Urbana, IL 61801, USA.

<sup>D</sup>Purdue Center for Cancer Research Transgenic Mouse Core Facility, Purdue University, 201 S. University Street, West Lafayette, IN 47907, USA.

<sup>E</sup>Present address: Research and Development Department, IMV Technologies, ZI N° 1 Est, 61300 L'Aigle, France.

<sup>F</sup>Corresponding author. Email: cferrei@purdue.edu



**Fig. S1.** Mass spectrometer capable of desorption electrospray ionization analysis of biological samples. Front view of the experimental set up. (1) Silica capillaries that direct the electrospray at the sample. (2) Source of nebulizing N<sub>2</sub>. (3) Solvent introduction line held at high voltage. (4) Extended capillary inlet to the mass spectrometer. (5) Computer controlled moving stage that manipulates sample position. (6) Computer for instrument control and data storage. Close up view of the DESI sprayer, sample, and extended capillary inlet.