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Data Article

Dataset on lipid profile of bovine oocytes exposed to $\text{L}\alpha$ -phosphatidylcholine during in vitro maturation investigated by MALDI mass spectrometry and gas chromatography-flame ionization detection



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ABSTRACT

Data presented in this article are related with the research article entitled “Effect of soybean phosphatidylcholine on lipid profile of bovine oocytes matured in vitro” [1]. This article describes the differences in the relative abundance of the lipid ions detected by matrix-assisted laser desorption/ionization mass spectrometry (MALDI-MS) in control and $\text{L}\alpha$ -phosphatidylcholine-treated oocytes. In addition, the fatty acids (FA) content in pure $\text{L}\alpha$ -phosphatidylcholine supplement and oocytes was analyzed by gas chromatography-flame ionization detection (GC-FID). The

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MALDI-MS
GC-FID

dataset provides information and inputs for further studies aiming to optimize *in vitro* maturation conditions and cryotolerance of mammalian oocytes.

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Specifications Table

Subject area	<i>Biology</i>
More specific subject area	<i>Assisted reproductive technology</i>
Type of data	<i>Text file, table, figures</i>
How data was acquired	<i>Autoflex III MALDI time-of-flight mass spectrometer (Bruker Daltonics, Bremen, Germany) and GC-2010 capillary gas chromatograph system (Shimadzu, Tokyo, Japan)</i>
Data format	<i>Analyzed</i>
Experimental factors	<i>NA</i>
Experimental features	<i>Phospholipid and fatty acid detection by MALDI-TOF mass spectrometry and GC-FID in oocytes</i>
Data source location	<i>NA</i>
Data accessibility	<i>The data are available with this article</i>

Value of the data

- The data presents a comparison of the relative abundance of lipid ions detected by MALDI-MS in sampled control oocytes and oocytes supplemented with $L\alpha$ -phosphatidylcholine at 50 and 100 μ M during *in vitro* maturation.
- First FA content analysis by GC-FID of oocytes exposed to phosphatidylcholines during *in vitro* maturation.
- The samples were subjected to transmethylation/methylation procedures according to ISO 12966-2:2011 standard [2] and FAME (fatty acid methyl esters) were analyzed under conditions described in ISO 12966-4:2015 standard [3] and could be compared to others protocols.
- This data allow other researchers to develop targeted strategies for studying the effects of phospholipids on *in vitro* maturation of oocytes, embryo culture and cryopreservation.

1. Data

The dataset of this article provides information on lipid profile and FA content in bovine oocytes supplemented with $L\alpha$ -phosphatidylcholine (PC) during *in vitro* maturation (IVM). The Fig. 1 shows chromatograms of FA detected by GC-FID in control and PC-supplemented oocytes. The Figs. 2–4 are optical images showing the morphology of PC oocytes during IVM and resulting *in vitro* produced embryos. Table 1 contains a list of all significant ions detected by MALDI-MS in tissue culture medium

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