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Candidates for reproductive biomarkers: protein phosphorylation and acetylation positively related to selected parameters of boar spermatozoa quality

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Highlights

- P-PKAs and Pan-Kac were positively correlated with sperm motility in fresh semen.
- P-PKAs was positively correlated with the motility of liquid stored sperm.
- Providing a novel reproductive biomarker for the evaluation of semen quality.

ABSTRACT

Protein post-translational modifications (PTMs) have been reported to be involved in various functions of sperm, yet the exact correlation between PTMs and sperm motility remains unclear. With the goal of contributing to this subject, motility variables were measured by computer-assisted sperm analysis system (CASA), and the amount of PTMs were evaluated using Western blot and immunofluorescence in fresh sperm and liquid stored sperm. Results of the present study indicate that the amount of the phosphorylated substrates of PKA (P-PKAs), protein tyrosine phosphorylation (PTP), global protein acetylation (Pan-Kac) and α -tubulin acetylation

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