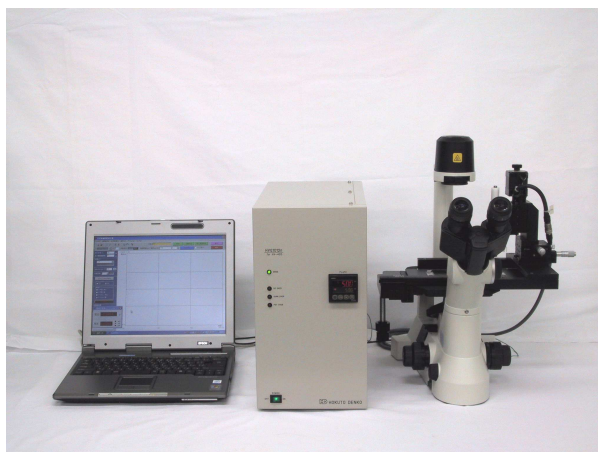


Embryo Respiratory Microsensor

BACKGROUND

Based on a micro-sensing technology of scanning electrochemical microscopy (SECM), we successfully developed "Embryo Respiratory Microsensor (ERM; Model CKHV405)". ERM is an innovative instrument in accurately measuring of the oxygen consumption rates of individual embryos and oocytes rapidly and non-invasively. Our recent study has clearly demonstrated the positive correlation between oxygen consumption rates and developmental competence of bovine embryos. ERM provides a great advantage for the reliable quality evaluation of embryos and oocytes which can be applied for embryo transfer and nuclear cloning. The best quality embryos evaluated by ERM are expected to increase the pregnancy rate of domestic animals by embryo transfer.

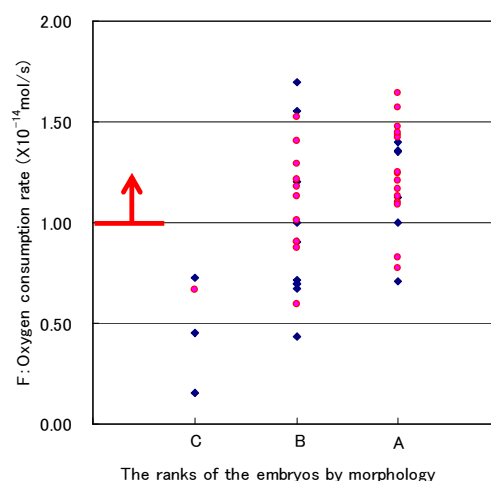


Major features of ERM

1. ERM is accurate, rapid and reproducible in measuring oxygen consumption rates of individual embryos and oocytes.
2. ERM is compact, easy-operating and low cost instrument for the best performance of quality assessment of embryos and oocytes.
3. Specially prepared incubation plate (respiration assay plate) and assay medium (embryo respiration assay medium; ERAM) are developed and are now available for the complete sets of ERM.

Relationship between the oxygen consumption rate and pregnancy rate of bovine sex-diagnosed embryos

Oxygen consumption rate (mol/s)	No. of embryos transferred	Pregnancy rate (%)
$F \geq 1 \times 10^{-14}$	22/30	73.3
$F < 1 \times 10^{-14}$	6/17	35.3



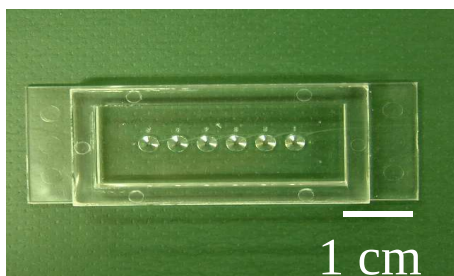
High oxygen consumption rate of the embryos resulted in the high pregnancy rate after embryo transfer!!



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Microelectrode (oxygen microsensor)



Respiration assay plate



Embryo respiration assay medium (ERAM)

For research use only. Not for clinical diagnosis.



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