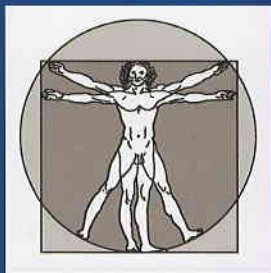


International Symposium on Morphological Sciences



XXIII ISMS 2013

September 10-13, 2013, Niigata, Japan

Program & Abstracts

Wednesday, September 11, Afternoon Session (Room B) 15:00-17:30

Mini-symposium 4

Recent Advances in Biology of Reproduction

Organized by Guido Macchiarelli (Italy),

Chaired by Eimei Sato (Japan), Kiyotaka Toshimori (Japan) , Stefania A Nottola (Italy)

- 15:00 Introductory remarks
- 15:05 **Kyotaka Toshimori** (Japan): Visualization of spermatogenesis and sperm function
- 15:25 **Kentaro Tanemura** (Japan): Late-effects on CNS induced by early exposure of environmental chemicals at developmental period
- 15:45 **Hideaki Yamashiro** (Japan): Effects of chronic radiation exposure associated with the Fukushima Nuclear Plant accident on the bull testis
- 16:05 **Stefania Annarita Nottola** (Italy): Ultrastructural assessment of quality of in-vitro matured human oocytes
- 16:25 **Eimei Sato** (Japan): Initial phase of germinal vesicle breakdown and cumulus expansion in cumulus-oocyte complexes
- 16:45 **Guido Macchiarelli** (Italy) : Ultrastructural parameters of aging in human cumulus-oocytes complexes
- 17:05 **Maria Grazia Palmerini** (Italy): Mitochondrial distribution and ATP production are related to ultrastructural parameters of quality in ovine oocytes.
- 17:25 Concluding remarks

Mini-symposium 4-3 (MS 4-3)

Effects of chronic radiation exposure associated with the Fukushima Nuclear Plant accident on the bull testis

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After the Great East Japan Earthquake on 11 March 2011, the Fukushima Daiichi Nuclear Power Plant (FNPP) accident led to a discharge of a tremendous amount of radioactive substances. We aimed to investigate the effect of chronic radiation exposure associated with the FNPP accident on the testis from 2 bulls and a Foetus. Estimated total dose of internal exposure from radiocesium in one bull was 2.0 mGy and external exposure was 2.8 mGy (196 days). Internal dose in the other was 4.7 mGy and external dose was 1.9 mGy (315 days). Sperm morphology and spermatogenesis were within normal ranges. ¹³⁴, ¹³⁷Cs radioactivity was detected but Cs was not detectable in the testis by electron probe microanalysis. Thus, adverse radiation-induced effects were not observed in bull testes following chronic exposure to the above levels of radiation for up to 10 months. The long-term impact of radiation on large animals within the FNPP evacuation zone needs to be continuously investigated, foetuses obtained by fertilization using sperm from bulls in the evacuation zone, and control bulls is underway in our laboratory.