

NidOil™ – a new oil overlay from NidaCon International AB

Background

One of the products required for ART is a light paraffin oil used as an overlay during gamete and embryo culture or manipulation. There have been problems of contamination and embryo toxicity with the oils currently available (see frequent correspondence on embryo mail), and even light-sensitivity (Provo & Herr, 1998). The objectives of the present study were to investigate the suitability of *NidOil™* for use in ART. *NidOil™* does not require washing before use, has been mouse-embryo tested and is stored in an amber bottle to avoid light-induced toxic changes.

Expt. 1: to test washed and unwashed aliquots of oil in a mouse embryo assay. Aliquots of washed and unwashed oil were used as an overlay in a culture system for mouse embryos (Embryotech, Wilmington, US). The number of embryos developing to the blastocyst stage within 72 hours is shown in Table 1.

Table 1. comparison of washed and unwashed batches of oil used in a mouse embryo assay.

Sample	No. blastocysts after 72 hours of culture
Control	15/15
Washed	21/21
Unwashed 1	20/21
Unwashed 2	21/21
Unwashed 3	21/21
Unwashed 4	21/21

Expt. 2: to test *NidOil™* against another commercially available oil, Ovoil™ (Vitro Life, Gothenburg, Sweden) using fertilisation and survival of human oocytes/embryos during IVF or ICSI as the test method (Dr. S. Zalavary, University Hospital, Linköping). Oocytes from each of 10 patients were divided into two groups. Attempts were made to fertilise half of the patients' oocytes in drops of fertilisation medium under *NidOil™*, the remaining oocytes being fertilised in drops under Ovoil™. Oocyte recovery, culture and fertilisation, and embryo transfer, were performed according to the clinic's standard procedures. Oocytes were only used from patients who had at least 6 mature oocytes. The results for fertilisation and subsequent development are shown in Table 2.

Table 2: Outcome of IVF or ICSI using *NidOil™*, or *Ovoil™*, as an overlay during gamete/embryo culture.

Oil	No. oocytes fertilised	No. good embryos	No. usable embryos
<i>NidOil™</i>	35/52 (67%)	9 (25.7%)	12 (34%)
<i>Ovoil™</i>	41/54 (76%)	9 (21.9%)	11 (27%)

Conclusions

- The paraffin oil used in *NidOil™* is so pure that the product does not require washing prior to use for human ART
- *NidOil™* performed as least as well as another commercially available oil, Ovoil™, when used as an oil overlay for *in vitro* embryo culture.

References

EmbryoMail@Ipsi.barc.usda.gov
Provo, MB. & Herr, C. (1998) Theriogen. 49, 214.