

'COOK[®]ing-IN' NEW MINC INCUBATORS: THEY REALLY CAN BE INSTALLED, PASS QUALITY CONTROL TESTING AND BE READY FOR PATIENT EMBRYOS IN ONLY 7 DAYS

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Objective: "Burn-in" of new incubators is normally performed over as long a period of time as possible. Mouse embryo studies have repeatedly demonstrated that incubators need to "off-gas" residual volatiles from various components before they will pass testing and be cleared for clinical use. We evaluate how quickly the COOK[®] mini-incubator (MINC) can be installed, tested and cleared for clinical use.

Design: Prospective analysis of quality control testing of new equipment in a private fertility clinic

Materials and Methods: We received 6 new K-MINC-1000 (COOK[®]) incubators on a Tuesday afternoon. They were unboxed and powered up to 37°C. Thursday, after 39 hours at 37°C, they were hooked up to a medical grade gas system and allowed to equilibrate overnight. Friday morning each MINC was evaluated for temperature and pH of overnight equilibrated media (Vitrolife[®]). At noon, 1-cell mouse embryos (Embryotech Laboratories) were placed into each MINC in pre-equilibrated 30µl droplets of G1 media under Ovoil[®]. Sunday, the embryos were transferred to G2 media. After the 96 total hours of culture, mouse embryos were evaluated for blastocyst development.

Results: Each MINC demonstrated a thermocouple temperature of 37.0°C and had a pH reading, using an iSTAT, within range for the media manufacturer under 5%O₂/6%CO₂/89%N₂ conditions. Overall blastocyst development of 54/61 embryos (88.5%) was observed, with no individual MINC with ≤70% blastocysts. All MINC's were put into clinical service following completion of quality control analyses and have now resulted in ongoing pregnancies.

Conclusions: This study demonstrates the extreme speed, only 7 days, in which COOK[®] MINC's can be delivered, quality-control tested and put into clinical service. Our results demonstrate that MINC mini-incubators require minimal "burn-in", much shorter than other manufacturers suggest before clinical use. An additional 11 MINC's were subsequently installed and put into clinical use over the next 14 days with similar quality control outcomes achieved.