Additional notes for EmbryoSlide® culture dish preparation

This TECHNOTE describes additional procedures and information related to the handling and preparation of EmbryoSlide® culture dishes.

The handling of EmbryoSlide culture dishes is described in the TECHNOTE “Preparation of EmbryoSlide® culture dishes”.

EmbryoSlide culture dishes: preparation for use on the same day

Although preparation of EmbryoSlide culture dishes is recommended one day before use, there may be circumstances requiring preparation of a culture dish for use on the same day.

The procedure follows essentially the one described in the TECHNOTE “Preparation of EmbryoSlide® culture dishes” except that the use of pre-warmed and pre-gassed/equilibrated medium is mandatory.

Culture dishes prepared with pre-gassed/equilibrated medium should be re-equilibrated after preparation for another 2-4 hours before embryos are loaded in the micro-wells. This serves mainly to stabilize the temperature.

Removal of occasional air bubbles

Usually the above method of filling does not produce air bubbles but all wells need to be carefully checked.

If air bubbles are present after preparation remove all bubbles in the well and in the oil layer immediately. However, small bubbles and bubbles in the micro-well can be more easily removed after equilibration.

- If air bubbles are present at the interface between the medium and the oil they should be removed immediately with a standard pipette containing media.

  By capillary effect the bubbles will aspirate into the pipette tip when this is placed close to the air bubble

- If air bubbles are present at the bottom of the micro-well or small bubbles are sticking to the side of the well it is recommended to incubate the EmbryoSlide culture dish in an incubator for 1-2 hours as this will cause the bubbles to grow and to round up for easier removal.

  Once the bubbles have rounded up simply touching them with a micro pipette tip will cause them to swim up and they can be easily removed without dragging oil into the micro-well.

The EmbryoSlide® culture dish

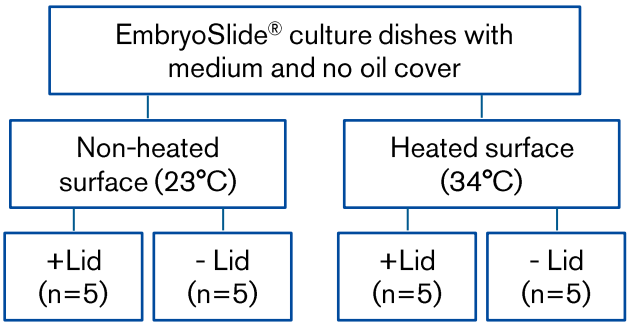
Effect of media evaporation

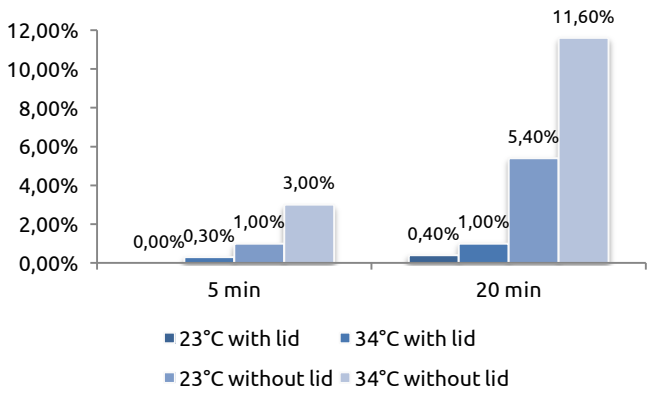
Media evaporation affects osmolality which potentially can impact embryo developement[1].

Vitrolife has investigated the degree of evaporation from EmbryoSlide culture dishes without oil cover:

Twenty EmbryoSlide dishes were filled with culture medium and placed on a non-heated surface (23°C, n=10) or on a heated surface (34°C, n=10).

For each surface temperature dishes were distributed evenly between lid-covered and non-covered (figure below, left). The laboratory humidity was 28-31% and the temperature 24-26°C. Evaporation was estimated by measuring weight loss at 5 and 20 min after preparation (figure below).





The study showed evaporation of 3% of the medium from a non-covered dish on a heated surface within 5 minutes.

This corresponds to an increase in osmolality of 3.1%.

The results demonstrate the importance of minimizing the handling-time of medium in culture dishes without lid. For EmbryoSlide dishes at the heated surface, evaporation was clearly evident after 5 min as water vapour on the lids.

[1]*Swain et al. (2012):Reprod Biomed Online 24: 142-47*

Refer to the TECHNOTE *"Preparation of EmbryoSlide® culture dishes"* for a description of the standard procedures for EmbryoSlide culture dish preparation.