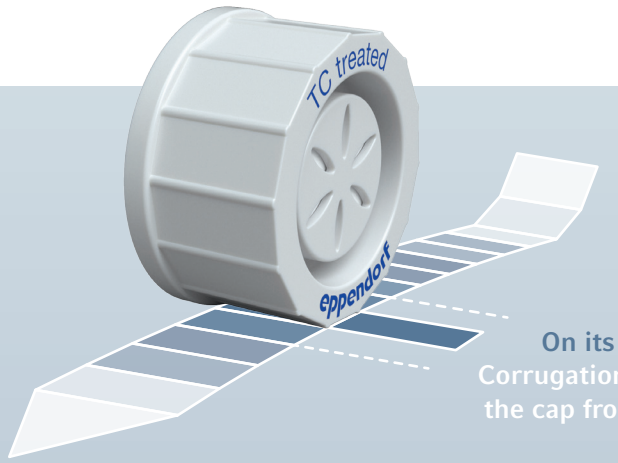
Stay Informed

Tips and Techniques to Enhance Your Cell Culture

Cell culture techniques are usually taught by experienced lab mates. To reduce experimental errors, it is, of course, important to follow established procedures. But there are additional small steps you can take to further increase the quality of your results.

Direct cell seeding into culture vessel

Premixing of cells prior to cell seeding



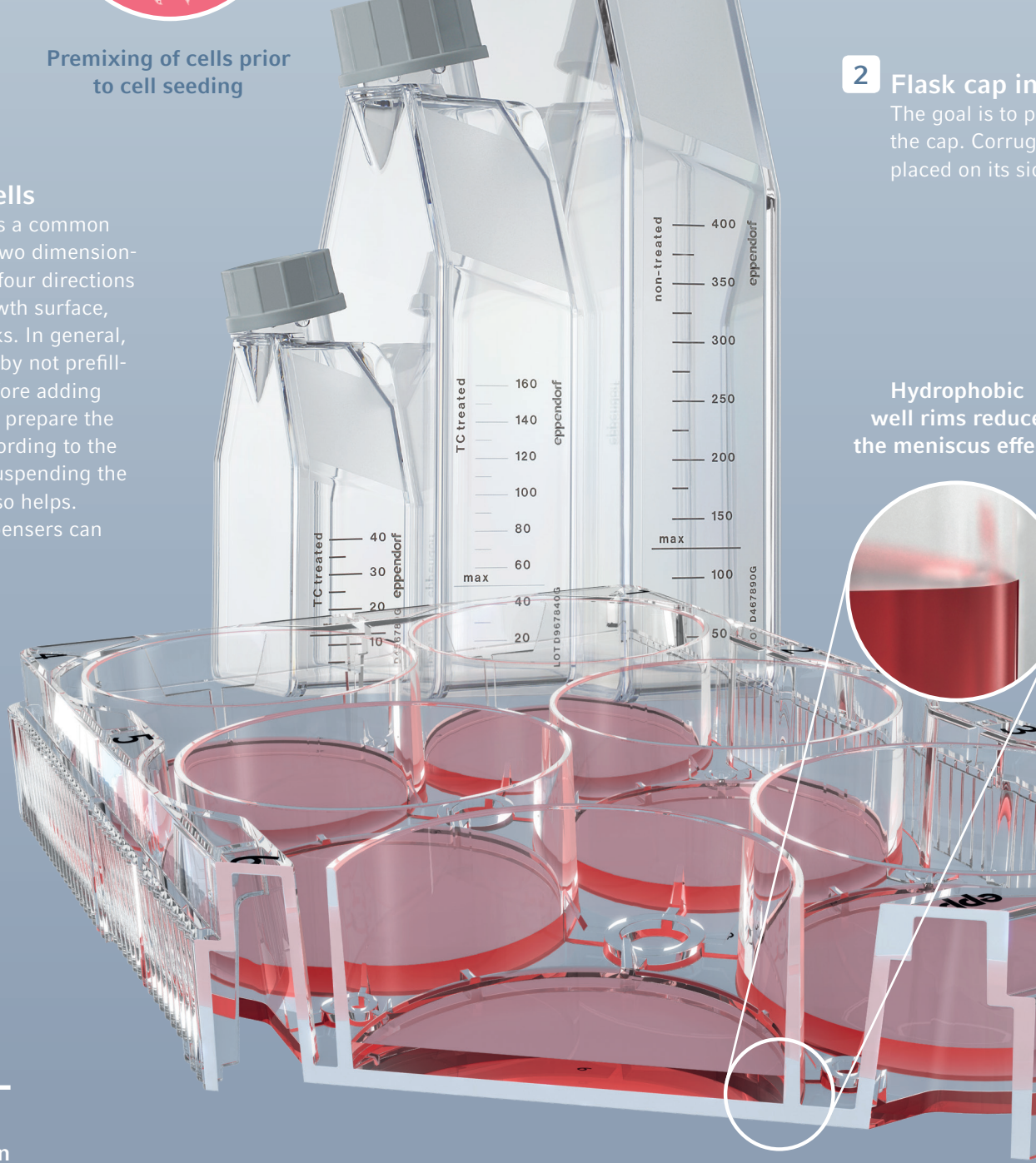
On its side: Corrugation prevents the cap from rolling.

Inside down: Make sure surfaces are sterile!

Inside up: No movement above the cap!

1 Even distribution of cells

Uneven distribution of cells is a common problem. Moving the vessel two dimensionally in a figure eight or in all four directions can help. The bigger the growth surface, the better this approach works. In general, you will obtain better results by not prefilling the vessel with media before adding the cells. Instead, you should prepare the cell suspension in a tube according to the number of cells needed. Resuspending the cell suspension frequently also helps. Multichannel pipettes or dispensers can speed up the process!

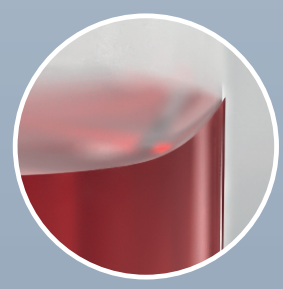


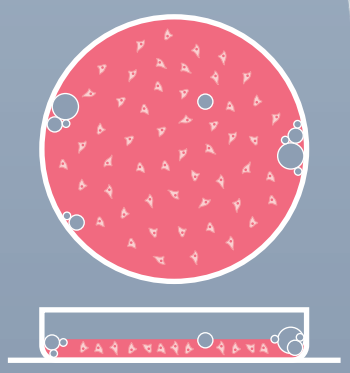
2 Flask cap inside up or down?

The goal is to prevent contamination of the cap. Corrugated antirolling caps being placed on its side help to avoid contamination.

Hydrophobic well rims reduce the meniscus effect.

Hydrophilic well rims show the meniscus effect.





Avoid air bubbles for homogenous cell adhesion

3 Cell adhesion and air bubbles

The culture medium tends to foam. This disturbs homogenous cell adhesion as air bubbles can hinder cell attachment. Avoiding air bubbles can be achieved using two different approaches:
(1) Avoid fast and harsh pipetting of cell suspensions.
(2) By using positive displacement pipettes, air bubbles can be minimized and cells can be seeded rapidly and accurately.

4 Efficient microscopic analysis

As useful as it is, TC treatment makes polystyrene hydrophilic, which causes a meniscus effect. In order to minimize the meniscus and to enhance image quality, you should use consumables without TC treatment or where the treatment is limited to the bottom of the well.

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