ReadyCell has developed CacoGoblet, a mucus-secreting ready-to-use kit. The kit consists of 24 and 96-well permeable supports seeded with differentiated Caco-2 and human goblet cells. CacoGoblet allows \textit{in vitro} intestinal absorption evaluation of drug targets in a barrier physiologically closer to the intestinal epithelium. CacoGoblet is flexible, since plates can be used up to 5 days after ideal cell barrier differentiation at day 21, being a time and cost-saving tool for early stage drug discovery and development.

### CacoGoblet Features

- Cell-based
- Ready-to-use
- 24 and 96-HTS insert- integrated plate format
- Exclusive solid shipping medium

### CacoGoblet Applications

- Evaluation of oral absorption efficiency, oral bioavailability and oral toxicity
- Adaptation to High Throughput Screening of target compounds
- Study of mechanisms involved in oral and intestinal absorption
- Suitable for research on new delivery systems

### CacoGoblet Benefits

- Mucus-secreting CacoGoblet represents a more predictive model for compounds or formulations with passive diffusion transport pathway
- CacoGoblet allows end-users to avoid in-house maintenance and handling of cell cultures, thus reducing operating costs
- CacoGoblet provides a 21-day barrier
- Our exclusive shipping medium ensures the stability of barrier properties
- The kit has been designed to provide a user-friendly and suitable tool for high-throughput automated procedures
- High flexibility as the kit is useable up to 5 days after 21-day cell barrier differentiation
A CELL-BASED AND READY-TO-USE CONCEPT FOR IN VITRO INTESTINAL ABSORPTION EVALUATION

CacoGoblet Experimental Data: Apparent permeability coefficient of standard compounds

- Functionality comparison of CacoGoblet 96 HTS vs. CacoReady™96 HTS barrier, evaluated by permeability assays of several compounds at day 21
- Functionality comparison of CacoGoblet 24 HTS barrier, evaluated by permeability assays of several compounds at day 21

<table>
<thead>
<tr>
<th>Human Intestine</th>
<th>Caco-2</th>
<th>CacoGoblet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>absorptive (80%), mucus-secreting (10-30%)</td>
<td>absorptive (100%)</td>
</tr>
<tr>
<td>Presence of mucus</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Paracellular permeability</td>
<td>More permissive epithelium</td>
<td>Very tight epithelium</td>
</tr>
<tr>
<td>TEER (ohms)</td>
<td>20-110</td>
<td>2000-3000</td>
</tr>
</tbody>
</table>

Shipping medium

- Solid at room temperature (liquid at 37°C)
- Permits differentiation process progression
- Do not perturb monolayer integrity
- Preserves cell viability
- Do not affect cell culture properties

RECEIVE | LIQUIFY | APPLY | ASSAY
---|---|---|---
Ready-to-use cell barrier | Liquefying of solid shipping medium at 37°C | Incubation with test compound | Assessment of permeability / transport end point

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www.readycell.com
Characterization of the mucus in CacoGoblet™

- **Image A**: Cellular disposition of Caco-2/M6 co-culture showed by fluorescent α-Ecadherin ICC
- **Image B**: Confocal transversal section of α-Ecadherin ICC in Caco-2/M6 co-culture (Negative contrasted image)
- **Images C and D**: Confocal microscopy merge, showing the mucus layer distribution, stained by IHC α-drug with ALEXA FLUOR® 488 Phalloidin. C, D correspond to low and high passage, respectively
- **Images E and F**: In vivo specific mucopolysaccharide staining with alcian blue. E, F correspond to low and high passage, respectively