Cell-based intestinal absorption models combined with food and digestive matrixes to study toxicity and in vitro bioavailability of food bioactives and contaminants

Commonly used acronym: bioavailability

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SCOPE OF THE METHOD

<table>
<thead>
<tr>
<th>The Method relates to</th>
<th>Human health</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Method is situated in</td>
<td>Basic Research</td>
</tr>
<tr>
<td>Type of method</td>
<td>In vitro - Ex vivo</td>
</tr>
<tr>
<td>Specify the type of cells/tissues/organisms</td>
<td>intestine, liver, immune cells</td>
</tr>
</tbody>
</table>

DESCRIPTION
Method keywords
bioavailability
digestion
intestine
food
bioactives
toxins
epithelial barrier function

Scientific area keywords
bioaccessibility
bioavailability
food
effect of food matrix on availability of compounds
cytotoxicity
digestion

Method description
A set of protocols to combine the widely used Caco-2 cell line with digests from *in vitro* digestion models (small intestine, colon) to study toxicity, intestinal barrier integrity, bioavailability and, when combined with other cell models (immune, liver, endothelium), bioactivity of food related bioactives and contaminants.

Lab equipment
- Cell culture facilities;
- Trans-epithelial electrical resistance measurements;
- Fluorescence plate reader;
- Advanced analytical techniques.

Method status
History of use
Published in peer reviewed journal
PROS, CONS & FUTURE POTENTIAL

Advantages

- Includes relevant food and digestive matrices;
- Barrier and transport assays combined.

Challenges

- Case-per-case optimization;
- Toxicity.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References