Key products for dermatological cell culture

→ Primary cells give you greater physiological relevance
→ Complete cell culture systems designed and optimized to work together
→ Backed by expert technical support

Invitrogen’s Cascade Biologics® primary cells have been developed to work together for optimal performance. When your cell culture research demands relevance, reliability, and robustness, choose Cascade Biologics® primary cells to meet your most critical needs.

### Table 1—Cascade Biologics® products for dermatological research. *

<table>
<thead>
<tr>
<th>Primary human cells (cryopreserved)</th>
<th>Keratinocytes</th>
<th>Melanocytes</th>
<th>Dermal fibroblasts</th>
<th>Dermal microvascular endothelial cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Neonatal (C-001-SC)</td>
<td>• Neonatal, lightly pigmented donor (C-002-SC)</td>
<td>• Neonatal, moderately pigmented donor (C-102-SC)</td>
<td>• Neonatal (C-004-SC)</td>
<td></td>
</tr>
<tr>
<td>• Adult (C-005-SC)</td>
<td>• Neonatal, darkly pigmented donor (C-202-SC)</td>
<td>• Adult, lightly pigmented donor (C-024-SC)</td>
<td>• Adult (C-013-SC)</td>
<td></td>
</tr>
<tr>
<td>Keratinocytes (prepared APF)</td>
<td>• Neonatal (C-020-SC)</td>
<td>• Neonatal (C-021-SC)</td>
<td>• Neonatal (C-010-SC)</td>
<td></td>
</tr>
<tr>
<td>• Neonatal (C-021-SC)</td>
<td>• Adult (C-013-SC)</td>
<td>• Neonatal (C-010-SC)</td>
<td>• Adult (C-011-SC)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Epitransferring medium (500 ml)</th>
<th>Epilife® (M-500)</th>
<th>Medium 254 (500 ml)</th>
<th>Medium 106 (500 ml)</th>
<th>Medium 131 with attachment factor (500 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Standard (M-EP-500-CA)</td>
<td>• Standard (M-254-500)</td>
<td>• Calcium-free (M-254CF-500)</td>
<td>(M-106-500)</td>
<td>(M-131-500)</td>
</tr>
<tr>
<td>• Calcium-free (M-EPcF-500)</td>
<td>• Calcium-free (M-254CF-500)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Calcium- and phenol red-free (M-EPcF/PRF-500)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Human keratinocyte growth supplement (HKGS)</th>
<th>Medium 254 (500 ml)</th>
<th>Medium 106 (500 ml)</th>
<th>Medium 131 with attachment factor (500 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Single-addition (S-001-5)</td>
<td>• Standard (M-254-500)</td>
<td>• Calcium-free (M-254CF-500)</td>
<td>(M-106-500)</td>
</tr>
<tr>
<td>• Kit (S-001-K)</td>
<td>• Calcium-free (M-254CF-500)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Human melanocyte growth supplement (HMGS)</th>
<th>Human melanocyte growth supplement (HMGS)</th>
<th>Low-serum growth supplement (LSGS)</th>
<th>Microvascular growth supplement (MVGS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(S-002-5)</td>
<td>(S-002-5)</td>
<td>• Single-addition (S-003-10)</td>
<td>(S-005-25)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Kit (S-003-K)</td>
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</tbody>
</table>

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<thead>
<tr>
<th>EpiLife® defined growth supplement (EDGS)</th>
<th>Epilife® defined growth supplement (EDGS)</th>
<th>Human melanocyte growth supplement (HMGS)</th>
<th>Human melanocyte growth supplement-2 (HMGS-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(S-012-5)</td>
<td>(S-012-5)</td>
<td>(S-016-5)</td>
<td>(S-016-5)</td>
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</table>

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<thead>
<tr>
<th>Subculture and other reagents</th>
<th>Coating Matrix Kit (R-001-K)</th>
<th>Defined trypsin inhibitor (R-007-100)</th>
<th>Gentamicin/amphotericin 10-pack (R-015-10)</th>
<th>Recombinant trypsin/EDTA (R-009-50)</th>
<th>Synth-a-Freeze® cryopreservation medium (R-005-50)</th>
</tr>
</thead>
</table>

* The cells listed in Table 1 are also available as proliferating cultures (catalog numbers for proliferating cultures take the form C:xxx-25P). All cells have tested negative for HIV-1, hepatitis B, hepatitis C, mycoplasmas, bacteria, yeast, and other fungi and are highly characterized.

Visit [www.invitrogen.com/primarycells](http://www.invitrogen.com/primarycells) to see the entire range of Cascade Biologics® primary cells and optimized media from Invitrogen Cell Culture.
Keratinocyte culture

Invitrogen offers a wide array of Cascade Biologics® products for keratinocyte culture, including products that are free of any animal-derived components such as bovine pituitary extract (BPE), serum, or any other components that are typically purified from animal sources. We refer to these products as being "animal product–free" and use the "APF" abbreviation to identify them.

If you’d like to culture your cells…

Then choose:

- In an animal product–free (APF) chemically defined environment
  - Cells—HDKn-APF or HEKa-APF
  - Basal medium—Epitec® medium
  - Growth supplement—EDGS
  - Reagents—trypsin/EDTA, defined tryptic inhibitor, gentamicin/amphotericin, Synth-a-Freeze® cryopreservation medium

- In a chemically defined environment
  - Cells—HDKn or HEKa
  - Basal medium—Epitec® medium
  - Growth supplement—HDGS
  - Reagents—trypsin/EDTA, defined tryptic inhibitor, gentamicin/amphotericin, Synth-a-Freeze® cryopreservation medium

- In a BPE-containing environment
  - Cells—HDKn or HEKa
  - Basal medium—Epitec® medium
  - Growth supplement—HDGS
  - Reagents—trypsin/EDTA, trypsin neutralizer, gentamicin/amphotericin, Synth-a-Freeze® cryopreservation medium

- In a BPE-containing environment for an extended lifespan
  - Cells—HDKn or HEKa
  - Basal medium—Medium 154
  - Growth supplement—HDGS
  - Reagents—trypsin/EDTA, trypsin neutralizer, gentamicin/amphotericin, Synth-a-Freeze® cryopreservation medium

- For a standard lifespan
  - Cells—HDKn or HDKa
  - Basal medium—Medium 154
  - Growth supplement—HDGS
  - Reagents—trypsin/EDTA, defined trypsin inhibitor, gentamicin/amphotericin, Synth-a-Freeze® cryopreservation medium

Selected references

Dermatological research references that cite the use of Cascade Biologics® products:


(Neonatal human epidermal keratinocytes; Epilife® medium; Epilife® defined growth supplement)


(Adult human keratinocytes; medium 154; human keratinocyte growth supplement; human melanocyte growth supplement)


(Neonatal human dermal fibroblasts; medium 100)


(Neonatal human epidermal keratinocytes; medium 154; human keratinocyte growth supplement; PSA solution)


(Neonatal human epidermal keratinocytes; Epilife® medium; human keratinocyte growth supplement)


(Human microvascular endothelial cells; medium 131; microvascular growth supplement)


(Adult human keratinocytes; Epilife® medium; Epilife® defined growth supplement)


(Neonatal human epidermal melanocytes from lightly-pigmented tissue; medium 254; human melanocyte growth supplement)


(Neonatal human epidermal keratinocytes; Epilife® medium; Epilife® defined growth supplement)


(Neonatal human epidermal keratinocytes; Epilife® medium; human keratinocyte growth supplement, V2)


(Human epidermal keratinocytes; Epilife® medium; human keratinocyte growth supplement, V2)


(Medium 254, human melanocyte growth supplement)


(Human epidermal keratinocytes; human epidermal melanocytes, human dermal fibroblasts; Epilife® medium 154; medium 106; Epilife® defined growth supplement; human melanocyte growth supplement; low serum growth supplement; PSA solution)


(Human epidermal keratinocytes; human epidermal melanocytes, human dermal fibroblasts)


(Human microvascular endothelial cells; medium 131; microvascular growth supplement)


(Human epidermal melanocytes; medium 154; human melanocyte growth supplement 2)


(Adult human keratinocytes; Epilife® medium; human keratinocytes growth supplement)


(Medium 254, human melanocyte growth supplement)


(Human epidermal melanocytes; medium 154; human melanocyte growth supplement)


(Human epidermal keratinocytes; Epilife® medium 154; human keratinocyte growth supplement)