Continuous Single Culture-NX (CSCM-NX)
HELPS EMBRYOS MINIMIZE METABOLIC STRESS
Use CSCM-NX to help take embryos further

Continuous Single Culture–NX provides an optimal environment for embryo development by eliminating unnecessary stress.

- Lower lactate concentrations in the culture media keep metabolic rates efficient and improve blastocyst utilization rates when used from fertilization through blastocyst stage.
- Minimize embryo disturbances
  - No dish changes
  - Reduce pH fluctuations
  - Reduce exposure to varying culture conditions
- Save on laboratory supplies
  - Reduce media usage – no medium changes
  - Fewer dishes and medium preparation steps
Lower Lactate Concentrations Maintain Efficient Metabolic Rates

Pyruvate, lactate, and glucose are main energy sources for oocytes and embryos, while pyruvate is the preferred energy source at early cleavage stages.¹³

Glucose is naturally consumed by embryos at all stages of development. The consumption increases as the embryo progresses to the blastocyst stage.²

The glucose taken up from the culture medium is converted to pyruvate and then into lactate by lactate dehydrogenase (LDH), with the concomitant production of NAD⁺ from NADH. This reaction is reversible and operates close to equilibrium.³⁴

Lactate is produced naturally by embryos from glucose metabolism, with two molecules of lactate appearing in the culture medium for every one molecule of glucose consumed.

As glucose consumption increases, production of lactate increases and accumulates in the culture medium, resulting in a negative influence on embryo metabolism due to reduced pyruvate conversion by LDH and oxidation.³

Excess lactate in the culture medium, in addition to pyruvate and glucose, can burden metabolic efficiency, as embryos naturally produce lactate during energy production.¹³

---

¹ Gardner (1990)
² White (2017)
³ Internal data on file
⁴ Lane (2000)
Are Your Embryos On The Path To Metabolic Stress?

Stress in the embryo culture environment affects embryo development.

- Are you fertilizing and culturing in different media?
- Are you exposing embryos to varying culture conditions?
- Are you moving embryos to a different dish too often?
- Does your culture media have a high lactate concentration?
- Are you maintaining a constant pH?

Continuous Single Culture-NX is a clinically-proven, low lactate, single-step medium that helps improve blastocyst development when used from fertilization through culture.
CSCM-NX Helps Reduce Stress on Embryo Development from Fertilization in All Patient Age Groups

In a two-year prospective analysis of over 3,300 cycles, fertilization rates were improved when using a low lactate system from fertilization through culture.

<table>
<thead>
<tr>
<th>Embryo Culture Media</th>
<th>ICSI Fertilization Rate</th>
<th>Conventional Insemination Rate</th>
<th>Overall Fertilization Rate</th>
<th>No Fertilization Rate</th>
<th>Polyploidy Rate</th>
<th>1PN Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCM-C</td>
<td>69%</td>
<td>78.7%</td>
<td>70.8%</td>
<td>12.8%</td>
<td>8.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>CSCM-NXC</td>
<td>77.7%*</td>
<td>83.9%</td>
<td>79.0%</td>
<td>3.6%</td>
<td>5.4%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

*Differences were significant (p<0.05)
CSCM-NX Helps Reduce Stress On Embryo Development

In a clinical evaluation of over 8,000 embryos, embryos cultured in CSCM-NXC demonstrated improved development over those cultured in CSCM-C.†

<table>
<thead>
<tr>
<th>Embryo Culture Media</th>
<th>Fertilization Rate</th>
<th>Total-Usable Blastocysts</th>
<th>Good/Fair Quality Blastocysts on Day 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCM-C N=8021</td>
<td>70.7%</td>
<td>46.1%</td>
<td>41.4%*</td>
</tr>
<tr>
<td>CSCM-NXC N=148</td>
<td>73.6%</td>
<td>48.4%</td>
<td>46.8%*</td>
</tr>
</tbody>
</table>

N=Number of embryos
* Differences were significant (p<0.05)

CSCM-NXC improves the day 5 blastocyst utilization rate (BUR) by age group** over competitor culture media.†

**Age groups defined by the Society for Assisted Reproductive Technology (SART)

† Salmon, K, et al. “Improved Embryo Development After Use of Irvine Scientific’s Next Generation Continuous-Culture Media (NXC)”; ART Reproductive Center, Beverly Hills, CA USA PCRS 2018

‡ Manzo, Greco, “A continuous culture medium with a lower concentration of lactate has a pronounced effect on the percentage of usable blastocysts on day 5”; Villa Malfalda Clinic, Rome, Italy
A 2018, retrospective analysis of more than 6,600 embryos cultured in CSCM-NX determined that a lower lactate concentration improves euploidy rate by 10%, compared to both CSCM and a competitor sequential culture medium.†

A 3.5 year follow-up study demonstrated that the improved euploidy rates continued in CSCM-NX against a competitor’s sequential culture medium and CSCM.‡

Blastocyst utilization rates improve when maintaining a low lactate environment from fertilization through blastocyst.

In both labs, conventional insemination was performed in the same medium as culture.


‡ VerMilyea, “Positive effects of a low-lactate culture medium on embryo development and blastocyst ploidy status: a 3.5-year multi-clinic prospective review”; Ovation Fertility Austin and California Fertility Partners
## Ordering Information

### Uninterrupted Culture Media

<table>
<thead>
<tr>
<th>Item</th>
<th>Catalog #</th>
<th>Size</th>
<th>Additional Information</th>
<th>Shelf Life</th>
<th>Storage</th>
</tr>
</thead>
</table>
| Continuous Single Culture-NX Complete (CSCM-NXC) | 90168 | 2 × 20 mL  
60 mL | Ready-to-use, pre-supplemented with Human Serum Albumin, for a final total protein concentration of 5 mg/mL. Phenol red free. CE Marked. | 4 weeks after opening 120 days* | 2–8°C |
| Continuous Single Culture-NX (CSCM-NX) | 90167 | 60 mL | Requires protein supplement. Phenol red free. CE Marked. | 4 weeks after opening 120 days* | 2–8°C |

### Also Available

<table>
<thead>
<tr>
<th>Item</th>
<th>Catalog #</th>
<th>Size</th>
<th>Additional Information</th>
<th>Shelf Life</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Single Culture Complete (CSCM-C)</td>
<td>90165</td>
<td>2 × 20 mL</td>
<td>Ready-to-use, pre-supplemented with Human Serum Albumin (5% v/v HSA), for a final total protein concentration of 5 mg/mL. CE marked.</td>
<td>8 weeks after opening 120 days*</td>
<td>2–8°C</td>
</tr>
<tr>
<td>Continuous Single Culture (CSCM)</td>
<td>90164</td>
<td>60 mL</td>
<td>Requires protein supplement. CE marked.</td>
<td>8 weeks after opening 90 days*</td>
<td>2–8°C</td>
</tr>
</tbody>
</table>

*From date of manufacture

---

©2022 FUJIFILM Irvine Scientific. FUJIFILM Irvine Scientific, its logo, and Continuous Single Culture are registered trademarks of FUJIFILM Irvine Scientific, Inc. in various jurisdictions. P/N 004040 Rev.02