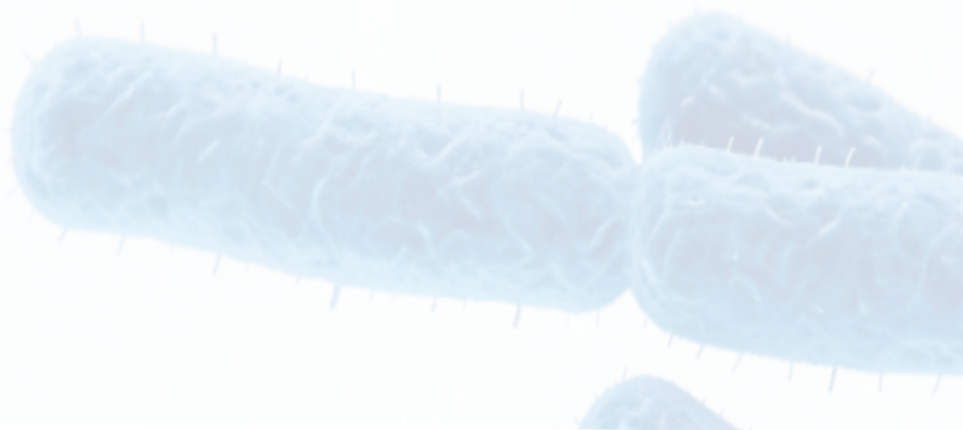


# *Insect*

***Cell Culture Media for  
Baculovirus Vector Production  
& Protein Expression*** 

**Sf9 & Hi5 Cell line**

**Unleash the Potential of Your Cells**



## MetaCell® IncreaSect 920

**MetaCell® IncreaSect 920** is a complete serum-free, animal-origin-free cell culture medium specifically developed for *Spodoptera frugiperda* Sf-9, S21 and *Trichoplusia ni* BTI-Tn-5B1-4 (High Five) cell lines. It is designed to support robust cell growth, baculovirus vector production and expression of recombinant proteins.



**1**

Designed for high-density transfection



**2**

Designed for high cell-density transfection & high-titer baculovirus stocks

### Your benefits



**3**

serum-free and animal-origin-free



**4**

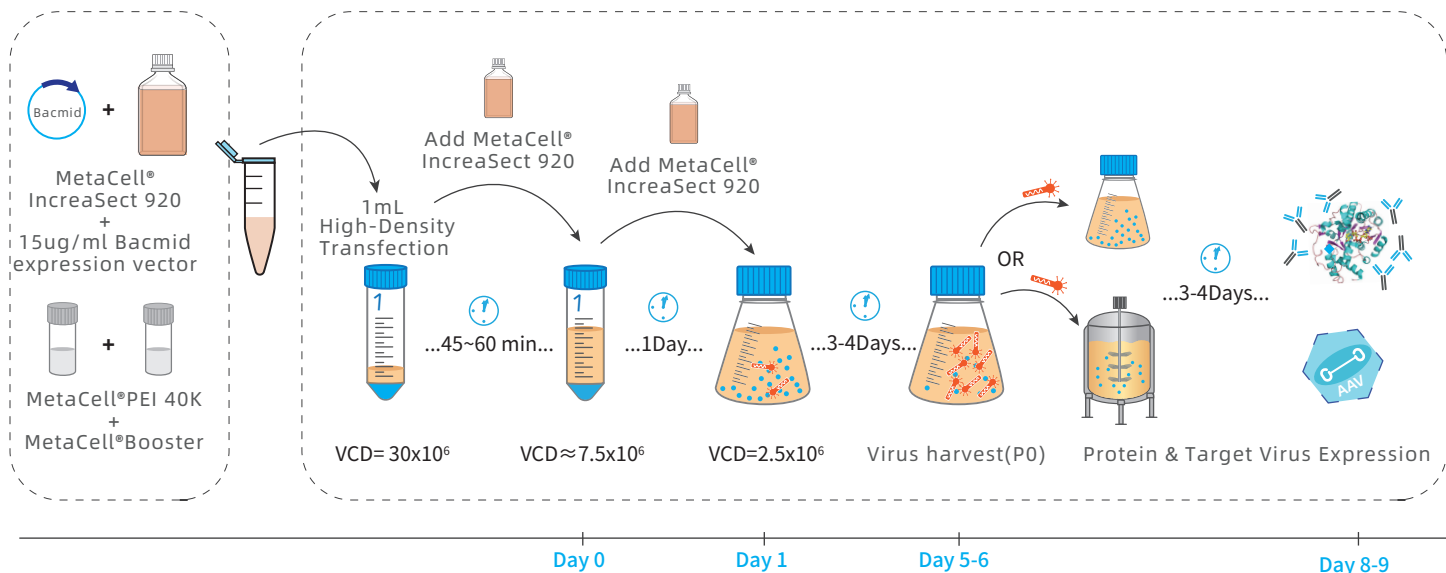
Consistent Performance for over 12 months



## Complete Workflow Solution for Protein Expression in Sf9 Cells

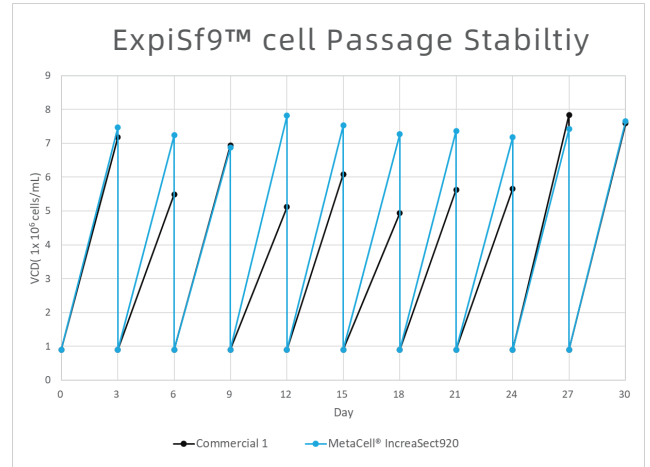
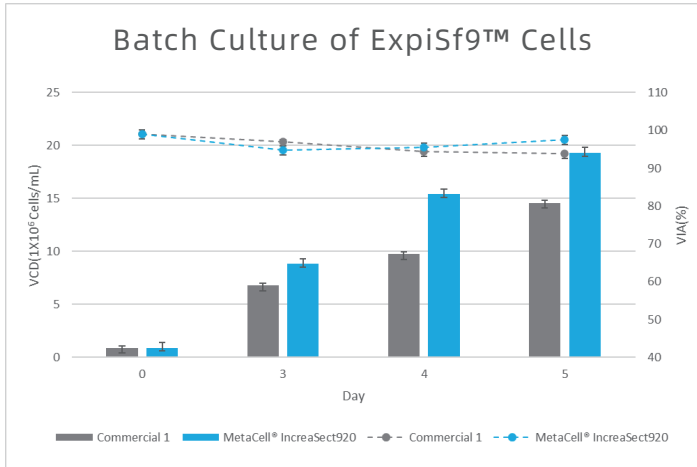
Maximize Your Yield and Shorten Timelines:

CellplusBio's optimized platform streamlines the entire process from bacmid transfection to protein expression using P0 baculovirus, significantly enhancing expression efficiency.



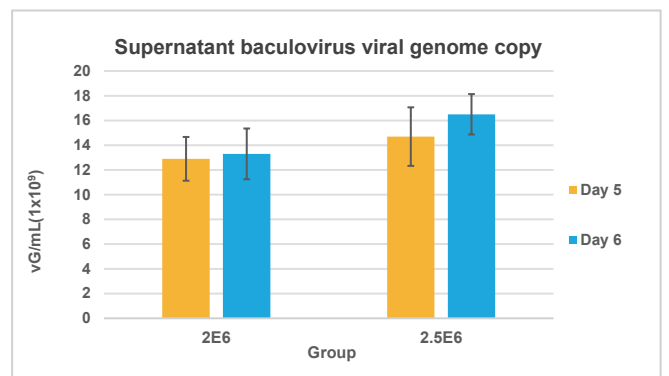
### Growth of ExpiSf9™ Cells in MetaCell® IncreaSect 920 Medium

Achieving peak cell densities of approximately  $20 \times 10^6$  cells/mL within 5 days. MetaCell® IncreaSect 920 demonstrated stable cell growth and higher viability compared with another commercial medium.

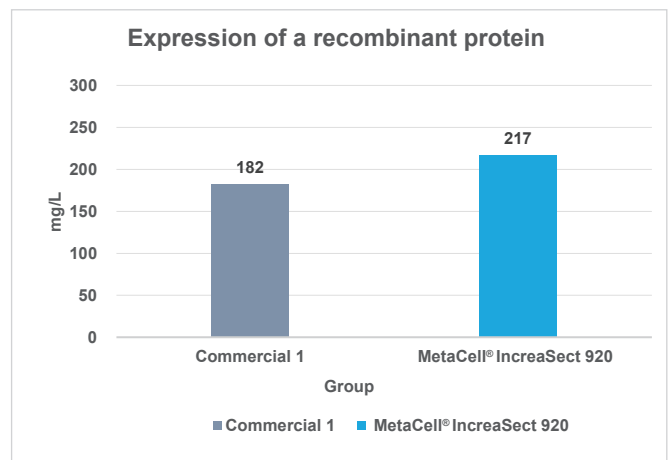
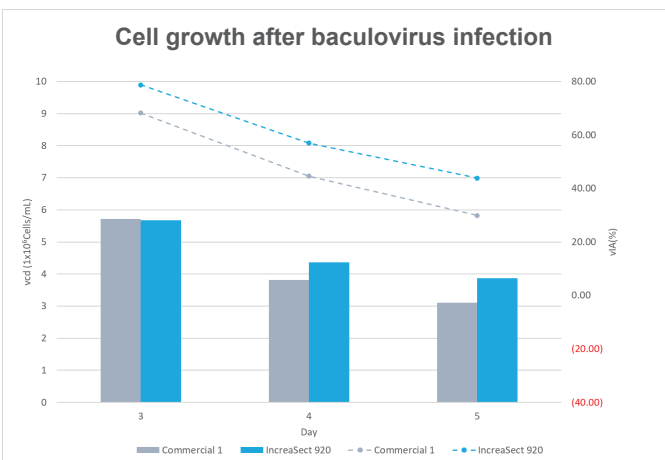


### Baculovirus Production Performance in MetaCell® IncreaSect 920 Medium

At 5-6 days post-transfection, baculovirus was harvested from the cell culture supernatant, and viral genomic DNA was extracted using a commercial DNA extraction kit. Viral genome copy number was quantified by qPCR using EGFP-specific primers to assess P0 baculovirus yield.

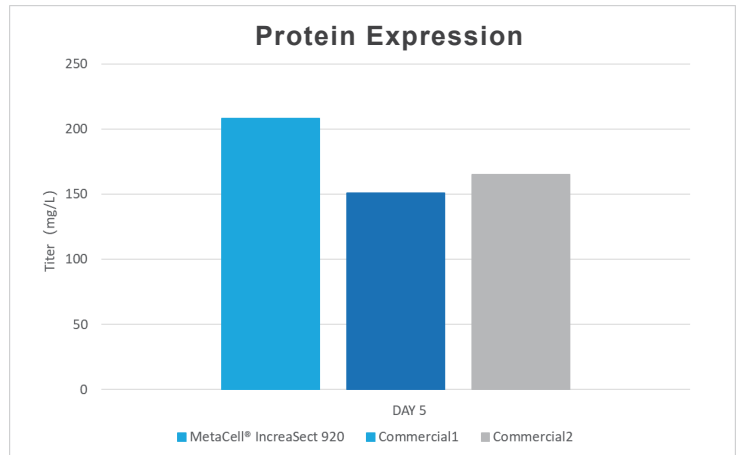
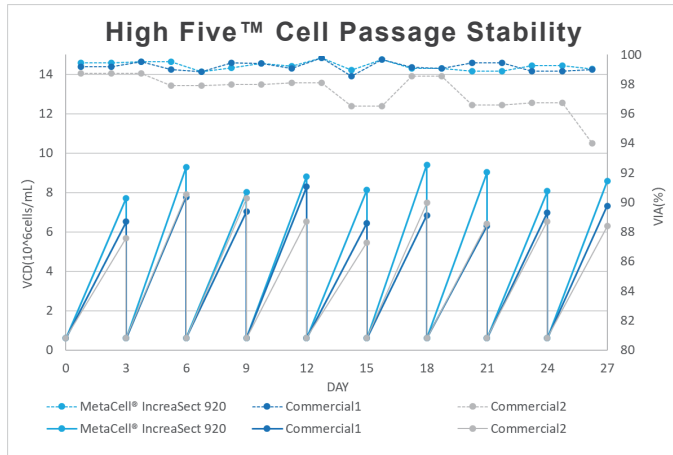


### Protein Expression Performance in of ExpiSf9™ cells in MetaCell® IncreaSect 920 Medium



## High Five™: Cell Passage Stability & Protein Expression

MetaCell® IncreaSect 920 demonstrates improved cell growth performance during the expression phase compared with control conditions, resulting in higher observed recombinant protein yields.



## Frequently Asked Questions (FAQ)

**Q1: Is there a passage limit for Sf9 cells? Does infection efficiency decline with higher passage numbers?**

**A:** Passage number alone is not the most reliable indicator of Sf9 cell quality. Cell health should be evaluated based on physiological indicators rather than passage count. While cells beyond passage 30 may exhibit signs of aging—such as increased cell size, aggregation, or reduced infection efficiency—culture conditions often have a greater impact than passage number.

**Key indicators to monitor include:**

- Viability: Cells remain usable if viability is  $\geq 95\%$
  - Doubling time: Typically ~25-30 hours
- If these parameters deteriorate, it is recommended to thaw a new vial.

**Q2: Why do Sf9 cells show poor passage stability and variable doubling times?**

**A:** If cell morphology and viability appear normal, unstable doubling times are often caused by passaging at excessively high

cell densities. For Sf9 cells, it is recommended to maintain a maximum growth density of  $\leq 8.0 \times 10^6$  cells/mL.

Adjust the seeding density and standardize the passaging schedule. If instability persists after 3-5 passages, revive a new cell batch.

**Q3: After thawing, suspension-cultured Sf9 cells show ~50% cell death within three days. Is this normal?**

**A:** No. This is not typical for healthy suspension insect cells. Under proper recovery conditions, Sf9 cells should generally reach  $3.0-5.0 \times 10^6$  cells/mL with a viability  $\geq 85\%$  by Day 3 post-thaw.

**A high death rate suggests underlying issues, which may include:**

- Incompatibility between freezing medium and recovery medium
- Errors during the freezing process (refer to the freezing protocol)
- Improper thawing or recovery procedures (refer to the recovery protocol)

**Q4: Why do insect cells from the same batch show inconsistent growth after resuscitation?**

**A:** Insect cells are more sensitive to physical stress than mammalian cells. During recovery, pipetting and resuspension should be performed gently to minimize mechanical damage.

**Recommended centrifugation parameters during resuscitation:**

- Centrifugal force:  $\sim 150 \times g$  (do not exceed  $200 \times g$ )
- Centrifugation time:  $\sim 4$  minutes (preferably  $\leq 5$  minutes)

These parameters may be adjusted based on specific experimental conditions.

**Q5: Sf9 cells seeded at  $1.0 \times 10^5$  cells/mL reached only  $1.0 \times 10^6$  cells/mL after three days, despite healthy morphology. Why is growth slow?**

**A:** Excessively low seeding density is a common cause of slow proliferation. For Sf9 cells:

- Minimum maintenance density:  $\sim 0.7 \times 10^6$  cells/mL
- Optimal subculture density:  $\sim 0.9$ – $1.1 \times 10^6$  cells/mL

Diluting cells below these thresholds can disrupt growth signaling and extend the lag phase, resulting in slower apparent doubling times.

**Q6: Under what conditions should insect cells be concentrated to increase cell density?**

**A:** Cell concentration is recommended in two main scenarios:

1. Nutrient depletion: After prolonged culture (typically 4–5 days), nutrients may be depleted and medium quality may decline. Even at low cell densities, centrifugation (e.g.,  $150 \times g$  for 4 minutes) followed by resuspension in fresh medium can help restore optimal conditions.

2. Excess debris or clumping: Concentration can help remove harmful substances released by dead or dying cells, reducing stress on the remaining healthy population.

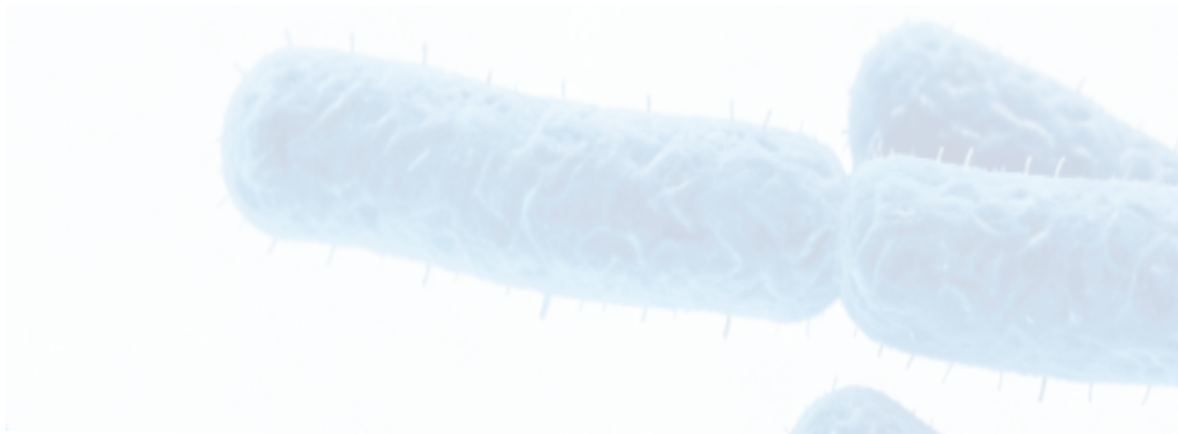
**Q7: Why do insect cells form clumps?**

**A:** Insect cells are inherently more prone to aggregation than mammalian cells, and minor clumping is generally acceptable. However, extensive or large clumps often indicate stress caused by suboptimal culture conditions.

**Common contributing factors include:**

- Improper passaging techniques
- Overgrowth or excessively high seeding density
- Extended passage numbers

If severe clumping is observed, it is advisable to promptly optimize culture practices or revive a new cell batch.




**Product list**

Product	Cat No.	Size	Storage	Shelf Life	Application
MetaCell <sup>®</sup> IncreaSect 920	P3202-X005	5L			
	P3202-X050	50L			
	P3202-X200	200L			
MetaCell <sup>®</sup> Glycerin	L3203-0010	10mL			
	L3203-0060	60mL	2-8°C	12 months (tentative)	SF9 Cell culture & Hi5 Cell culture
	L3203-0250	250mL			
MetaCell <sup>®</sup> Supplement B	L3205-0006	10mL			
	L3205-0040	40mL			
	L3205-0150	250mL			


**Other products**

Product	Cat No.	Application
MetaCell <sup>®</sup> IncreaSect 900	P3200	For serum-free suspension culture of Sf9 cells in baculovirus expression systems
MetaCell <sup>®</sup> IncreaSect Hi5	P3500	Designed for serum-free Hi5 cell suspension culture in baculovirus expression platforms



WEBSITE QR CODE



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 Instant Technical  
Support via WhatsApp

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\*For orders outside of China mainland please contact our local distributor.