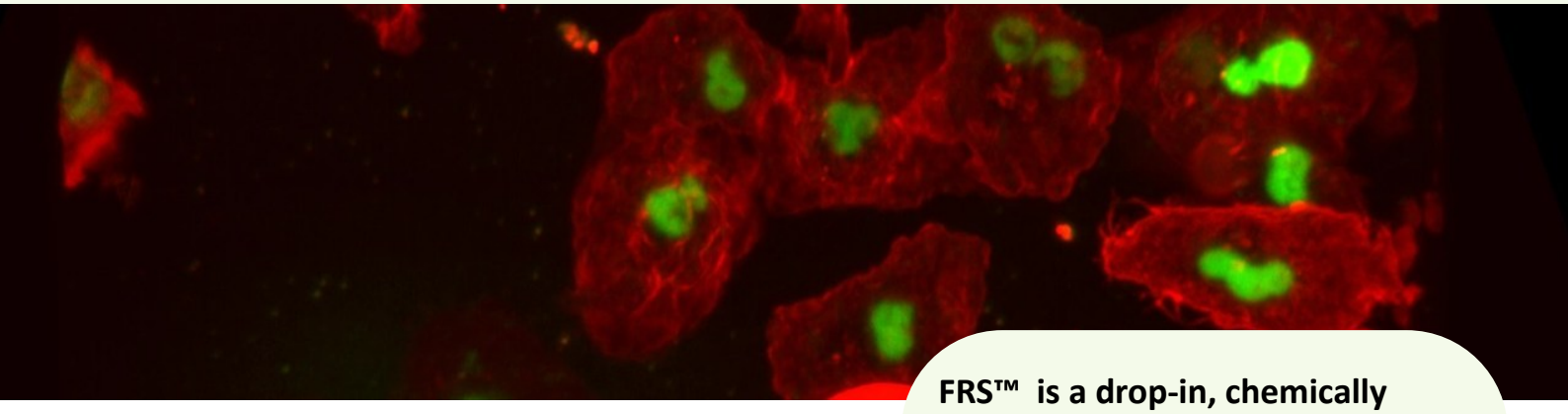
FRS™ Pioneer

Broad Spectrum Chemically Defined FBS Replacement

Primary Cells Data Sheet



Foetal Bovine Serum (FBS) has been a vital and historically irreplaceable serum supplement for cell culture media. Limitations including inherent contaminants and batch inconsistency alongside high and volatile prices are well known to scientists. This makes its use undesirable in research and clinical settings.

Media City Scientific's Foetal Bovine Serum Replacement Solution (FRS™) Pioneer is a drop-in chemically defined and animal component free replacement for FBS. FRS™ Pioneer supports long-term growth of a broad range of cell lines. For primary cell culture, we recommend the use of FRS™ Pioneer to reduce FBS usage rather than to eliminate it completely. This allows labs to use a consistent, single FBS batch for 5-10x longer.

FRS™ is a drop-in, chemically defined FBS replacement that is:

- Priced on par with premium FBS
- Consistent - enabling scientific reproducibility and reliability.
- Contains no animal derived components.
- Grows a broad range of cells
- Free of contaminants.

Broad Spectrum - Performance Across Multiple Cell Types

Chemically Defined— Unparalleled Reproducibility

Contaminant Free

Cost-Effective

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Learn more @ mediacityscientific.com

FRS™ Pioneer Performance

FRS™ Pioneer versus FBS for primary cell culture...

These application notes showcase proliferation of primary cells in FRS™ Pioneer. While FRS™ Pioneer effectively supports viability and short-term proliferation of a broad range of primary cells, long-term cell growth may require supplementation with additional factors or with 1% serum.

Cell types grown short-term with FRS™ Pioneer

Fibroblasts
Muscle stem cells (MuSCs)
Mesenchymal stem cells (adipose, muscle)
Chondrocytes
Endothelial cells

Following isolation and establishment of cell culture using FBS, cells were directly transitioned to FRS Pioneer. Cells were derived internally or externally from a variety of animal or human sources.

Key Application Notes:

Direct adaptation: Seed cells in FBS containing media. 24 hours later, perform a 100% feed to FRS™ Pioneer-containing media.

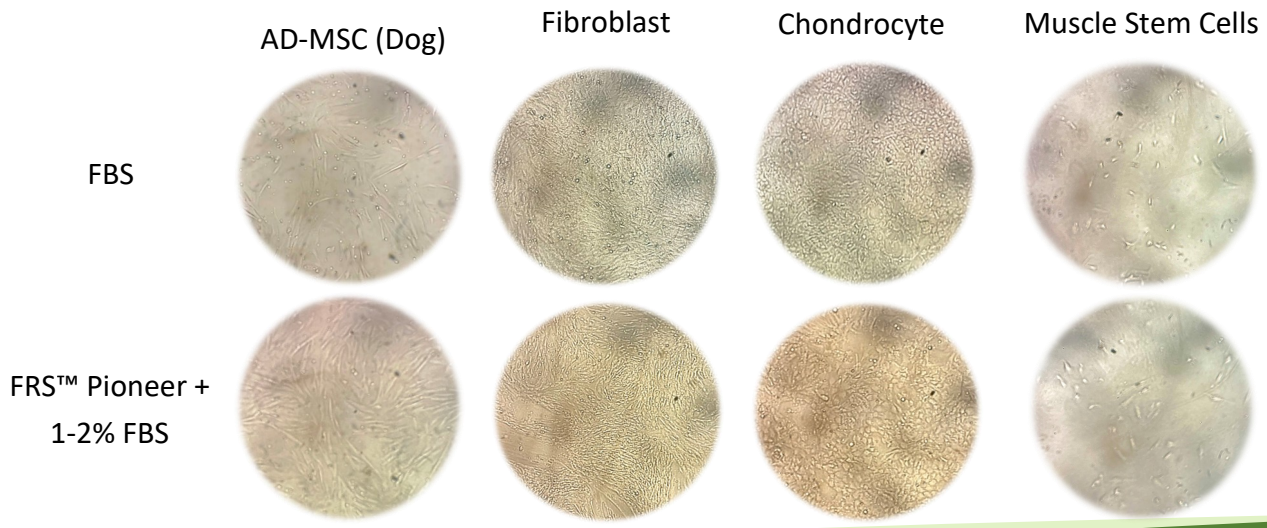
Use 10-fold less antibiotics

Use an adherence coating if necessary *(See GECKO by Media City Scientific or a cell-line specific adherence coating).*

Basal Media: Proliferation in FRS™ Pioneer may improve with a more complex media (e.g. DMEM/F12 for DMEM).

Replace FBS 1:1 with FRS™ Pioneer. Consider doubling FRS Pioneer if cells are particularly nutritionally demanding.

Example data: Morphology of selected cells following 8+ days in culture containing 10-20% FBS or 9-18% FRS™ Pioneer + 1-2% FBS. Cells in basal media alone did not grow.

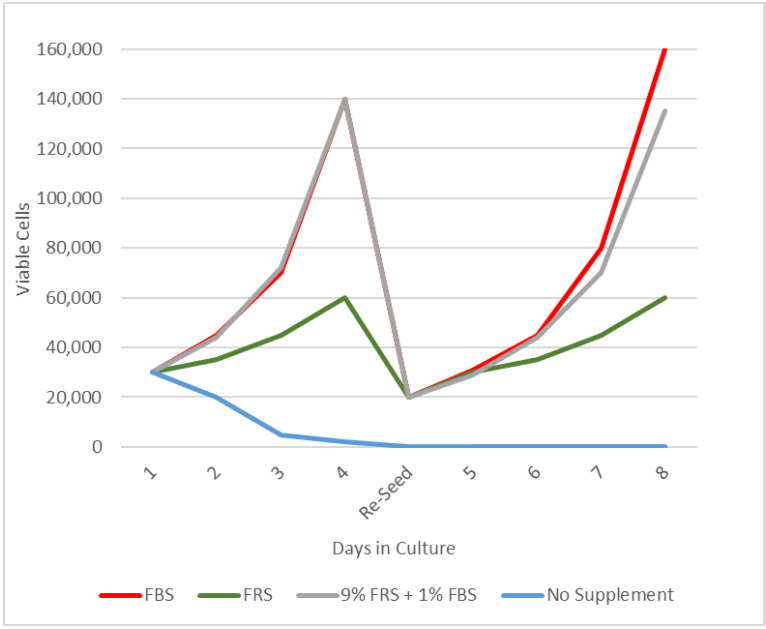


FRS™ Pioneer Performance

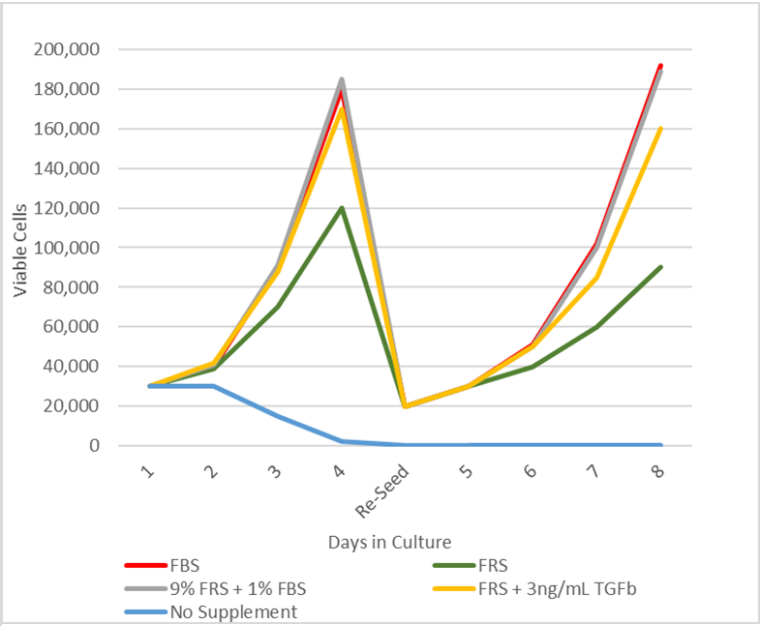
FRS™ Pioneer supports an 80-90% reduction in FBS usage for primary cell growth

Example: Proliferation of primary fibroblasts, chondrocytes, AD-MSCs and muscle stem cells with 10% FBS, 10% FRS™ Pioneer, a mix of 10% FBS & 90% FRS™ Pioneer, or no supplement. We recommend using FRS Pioneer to substantially reduce your serum for primary cell culture—rather than eliminating it all together—unless you are prepared to add in additional components (see yellow line examples, reach out to us for support)

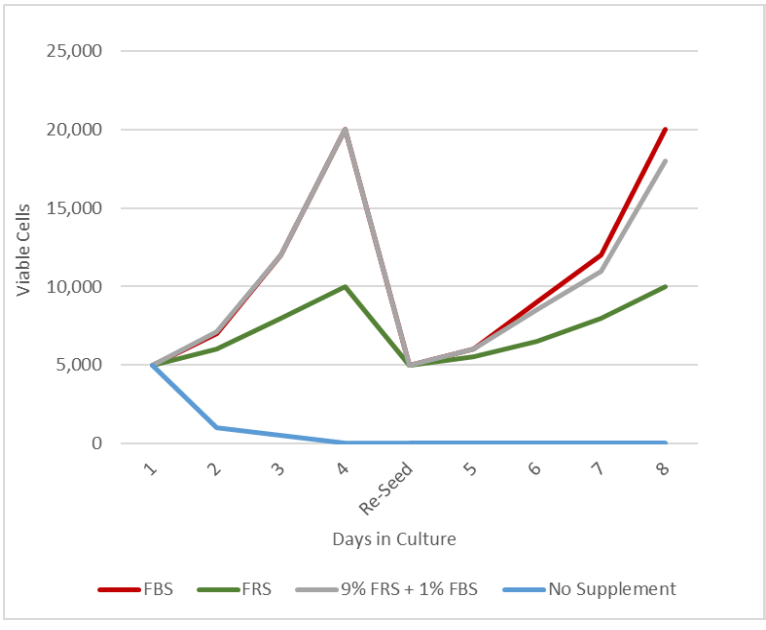
Fibroblasts



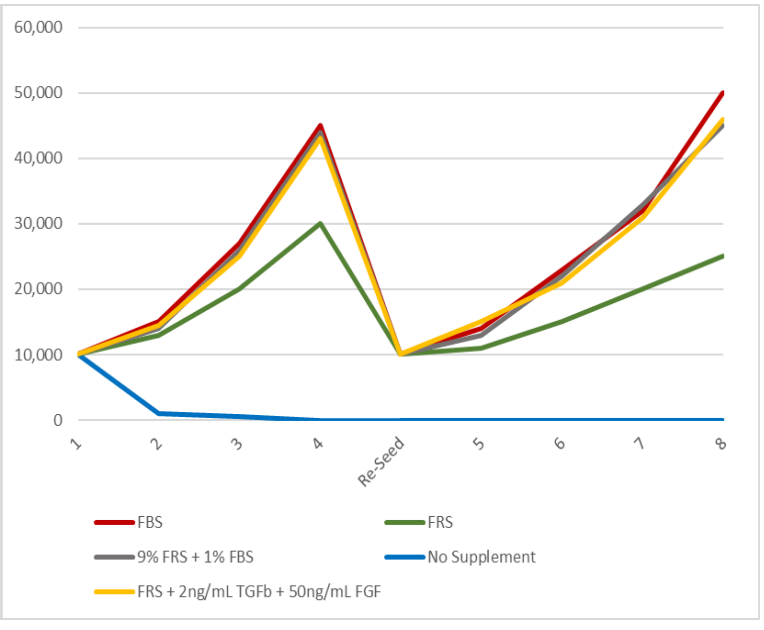
Chondrocytes



AD-MSCs



Muscle stem cells



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