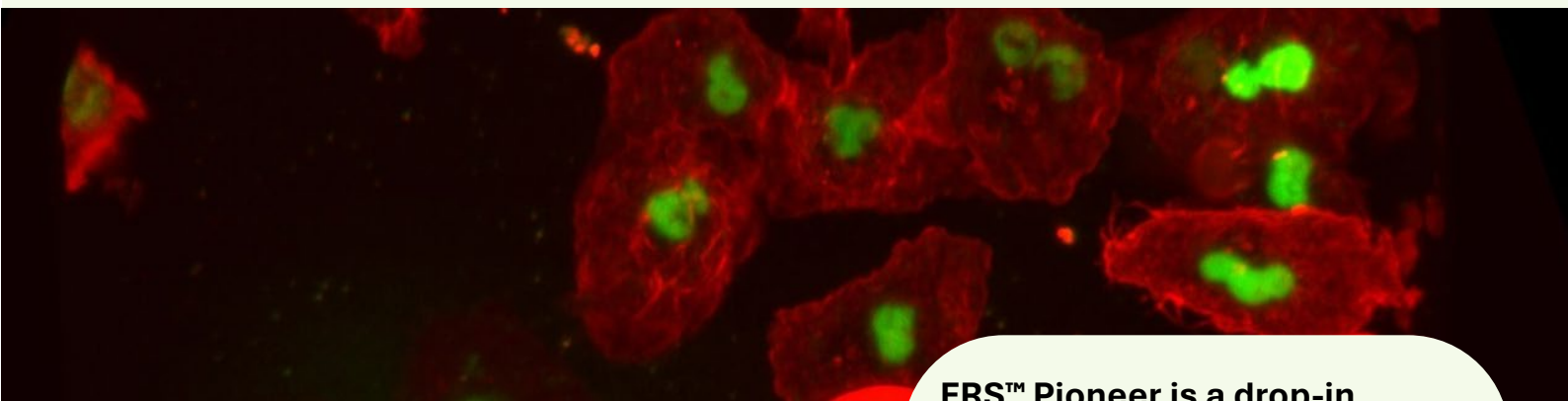


FRS™ Pioneer

Broad spectrum chemically defined FBS replacement

FRS™ Pioneer for immortalized cell culture



Fetal 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 Fetal Bovine Serum Replacement Solution (FRS™ Pioneer) is a drop-in chemically defined and animal component free FBS replacement. FRS™ Pioneer supports the growth of a broad range of cell types.

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

- Cost effective - priced on par with premium FBS
- Consistent - enabling scientific reproducibility and reliability
- Animal-free - contains no animal derived components
- Effective – supports a broad range of cells at a similar level of performance to FBS



Broad Spectrum -
Performance Across
Multiple Cell Types



Chemically Defined—
Unparalleled
Reproducibility



Contaminant Free



Cost-Effective

Media City
SCIENTIFIC

Learn more qkine.com/media-city-scientific/

FRS™ Pioneer Performance

FRS™ Pioneer versus FBS for immortalised cell culture

Following a direct adaptation process, a range of common immortalized cells were cultured in 2-10% FBS or FRS™ Pioneer for >30 days. FRS™ Pioneer supports minimal morphological changes and long-term cell proliferation, unlike basal media alone. Analyses indicate viability, surface marker expression, intracellular signaling and downstream function are maintained between cells cultured with FBS and FRS™ Pioneer.

Cell lines grown with FRS™ Pioneer for 6+ weeks:

A549 (Lung cancer)
CHO (Ovary)
HEK293 (Embryonic kidney)
MCF7 (Breast cancer)*
MDA-MB-231 (Breast cancer)
U87 (Glioblastoma)
Jurkat (T-cell)
MM.1R (B-cell)
HL-60 (macrophage)
NB4 (macrophage)

**Epithelial lines benefit from 1-2 passages in 1% FBS + 9% FRS + basal media before carefully managing adherence (see GECKO™). All cell lines tested to date grow successfully using FRS™ Pioneer.*

Key Application Notes:

Adaptation: Plate cells in FBS-containing media. 24 hours later (as cells enter exponential growth) perform a 100% feed to FRS™ Pioneer-containing media. Sequential adaptation methods are also successful. Consider adherence from the first fully serum-free passage.

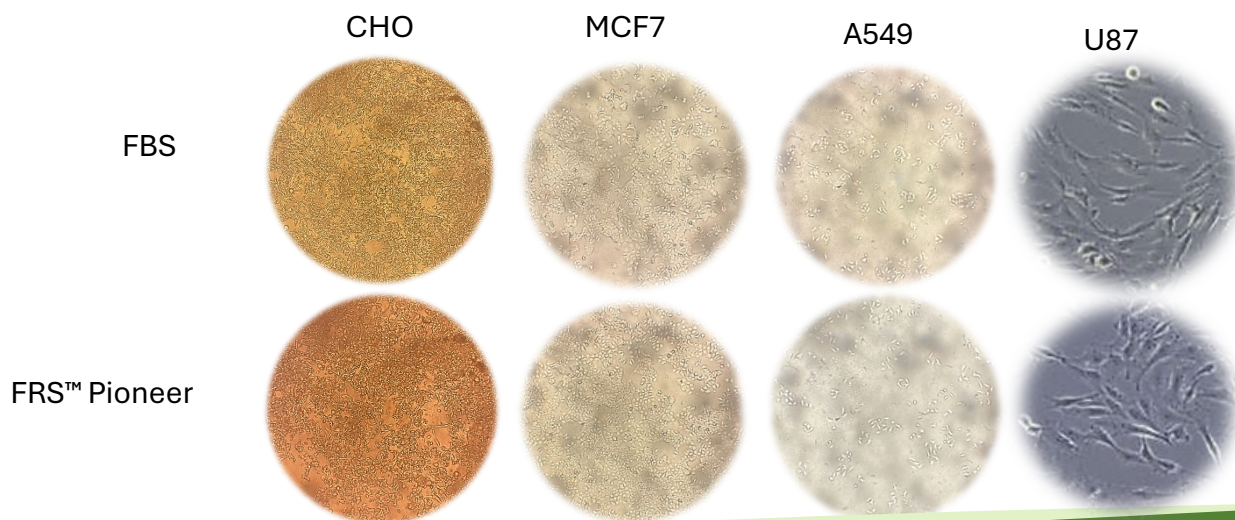
Use 5-fold less antibiotics

Adherence: Coat plates with GECKO™ by Media City Scientific or a cell-line specific adherence coating. Conditioned media may be sufficient for ECM-producing cells.

Replace FBS 1:1 with FRS™ Pioneer.

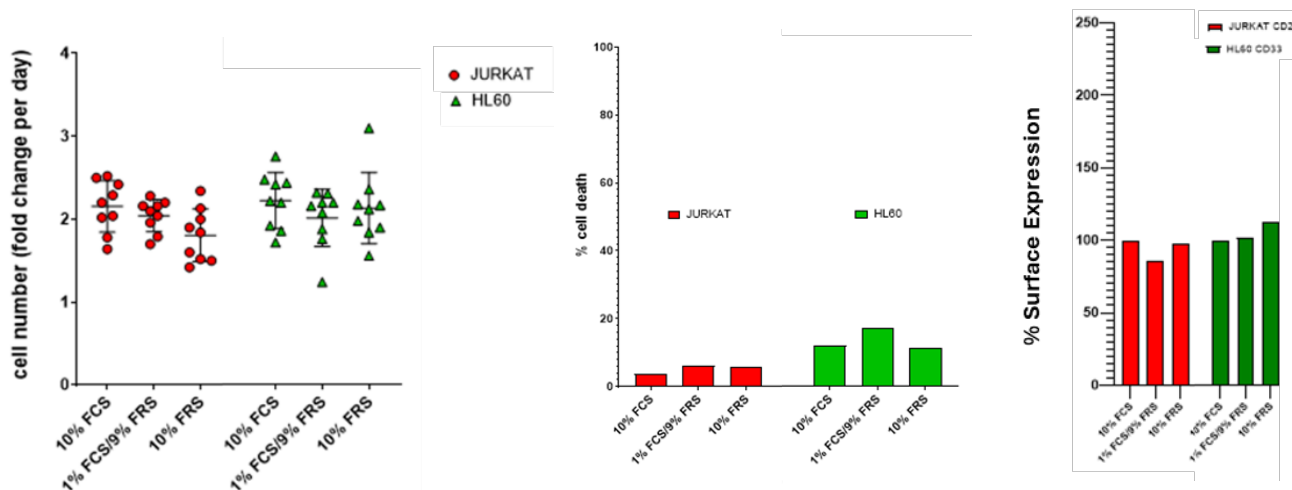
Basal Media: Cell proliferation in FRS™ Pioneer may be improved by using a more complex media (e.g. DMEM/F12 for DMEM).

Example: Morphology of selected cell lines following >10 passages in culture containing 10% FBS or 10% FRS™ Pioneer.

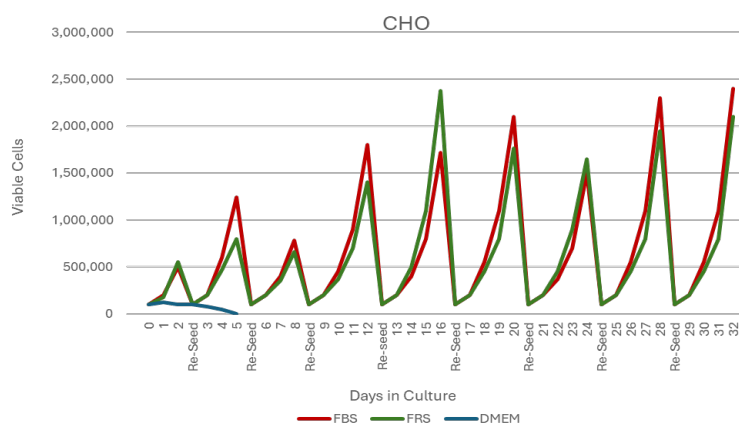


FRS™ Pioneer Performance

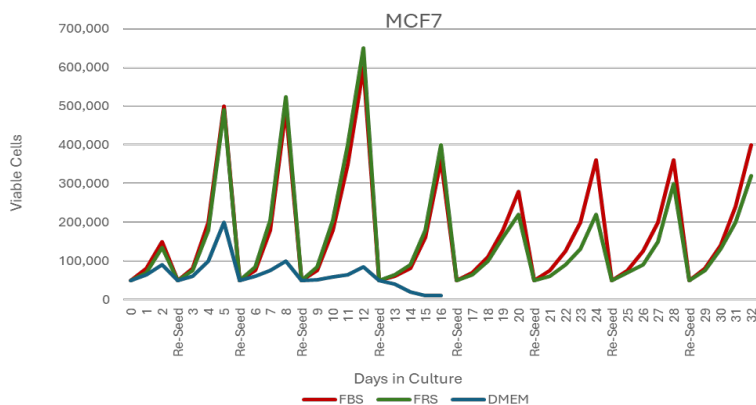
FRS™ Pioneer supports cell line proliferation



Example: JURKAT and HL-60 in RPMI with 10% FCS, 10% FRS™ Pioneer, or 9% FRS + 1% FCS. Cells were grown for >10 passages, then assessed for viability and cell surface marker expression.



Example: CHO in DMEM with 5% FBS, 5% FRS™ Pioneer, or no supplement. GECKO™ adherence coating. Equivalent results achieved when surfaces were coated with FBS-containing media.



Example: MCF7 in DMEM with 10% FBS, 10% FRS™ Pioneer, or no supplement. GECKO™ adherence coating. Equivalent results achieved when surfaces were coated with FBS-containing media.