

XerumFree™ vs. FBS

- Animal component free
- Fully defined
- Batch to batch consistency
- Storage at 4 degrees



XF – Fully defined

- Consistent composition
- No cytokines, no insulin and no hormones
 - Better control over cell development
 - Better control over growth and differentiation of stem cells
 - Low background in cell assays (like reporter gene assays)
- Low protein content
 - No globulins: interesting for hybridoma culture – monoclonal production
 - No albumins: interesting for In Vitro toxicology assays in cosmetic industry etc.
 - Less purification cost in production of monoclonal antibodies and other proteins

XF – Animal component free

- No contaminations with viruses and/or prions
 - Safe for production in biopharma and vaccine industry
- Ethically better acceptable
 - Animal welfare

XF –Batch to batch consistency

- Due to the defined composition of XF, the quality doesn't vary from batch to batch
 - Convenient
 - The researcher doesn't have to test each time when he wants to order a new batch
 - XF can be ordered with the convenience of ordering chemicals or media
 - No batch reservations needed
 - No need for planning to order of a batch for 2 year use
- Possibility for standardization
 - Easier for researchers to compare results
 - Possible to compare results after a long time.
 - Possible to compare results with colleagues
 - Better standardization for publications

XF – Storage at 4 degrees

- XF does not need to be stored in the freezer, but in the refrigerator
 - Save freezer space
 - Convenient: no need to thaw before use
- XF can be shipped at room temperature and stored in the refrigerator upon receipt
 - Convenience in logistics

XF vs. FBS – Cost reduction

- Batch to batch consistency – no need to test every new batch
 - No planning and testing needed. Save labour hours from procurement, and scientists and technicians.
 - Save reagents and consumables that are needed to test FBS
 - No need for huge investment by buying a big batch in one purchase. Orders can be send when the product is needed.
- XF has a very low protein content. No globulins
 - No or less purification steps in down stream processes.
- XF can be stored at 4 degrees and shipped at RT
 - No freezer capacity needed.
 - No dry ice needed.

XF vs. competitors serum replacements

- Competitors offer serum replacements that comply to 1 or more of the following points
 - Specific applicable for 1 cell type or a limited number of cell types
 - This makes up a huge number of different products in the competitors catalog
 - Consist of non defined compounds like yeast hydrolysates etc.
 - Consist of protein (albumin) concentrations from animal origin
 - Contain cytokines and/or insulin
 - Contain other hormones and growth factors

XF vs. competitors serum replacements

- XF is universally applicable for most human and mammal cells, including stem cells and primary cells
 - Easy to choose for the researcher. There is only 1 product
- XF is fully animal component free
- XF does not contain cytokines, or any undefined products like yeast, algae or plant hydrolysates. It is fully defined.
- XF is the only known product in the market that combines all mentioned points above.

XerumFree™

- XerumFree is developed to provide the nutrients for cell growth, which the cell cannot find in the basal medium
 - XF does not contain compounds that are not needed for cell growth, but can interfere with the cell growth, development and function of the cell
- XerumFree is not a serum free medium, but can be added to any basal medium in a comparable concentration the researcher is used to do with FBS

XerumFree™

- XerumFree provides the researcher with:
 - Convenience
 - Safety
 - Cost reduction in the upstream and downstream processes
 - Full control over his cells
 - Standardization
 - New possibilities

XerumFree™

is a new concept
in cell culture

Examples of benefits by customer

- Biopharma and vaccine production
- Pharma high throughput screening of chemical compounds
- Toxicology
- Stem cell technology
- Biotechnology industry
- Academic research
- Cell banks

Biopharma & vaccine production

- **Animal component free**
 - There is a strong pressure not to use FBS anymore due to the risk of viral or TSE contamination
- **Batch to batch consistency**
 - Strong need for standardization
- **Fully defined**
 - No unknown compounds, no unexpected effects
 - Certification
- **Cost reduction**
 - Purification in the downstream process

High throughput screening & toxicology

- **Where?**
 - Cosmetic industry
 - Chemical industry (pesticides etc)
 - Pharma industry to test potential compounds
- **XF doesn't contain albumins**
 - Albumins have the tendency to bind to chemical compounds
what would make the tests unreliable

Stem cell technology

- Development of stem cell technology will lead to clinical applications
 - In clinical applications the use of FBS will not be acceptable since there is the risk of contaminations
- XF does not contain insulin, cytokines and hormones.
 - Differentiation of the stem cells can be kept under control
 - Cytokines etc can be added at the moment, and in the concentrations the researcher wants. There will be no effect of other factors than only those who are added by choice of the researcher.

Biotechnology industry

- Cost reduction in down stream processes (purification)
 - Monoclonal production
 - XF does not contain globulins
 - Recombinant protein production
 - XF has a very low protein content
- Batch to batch consistency
 - Standardization

Academic research

- **Batch to batch consistency**
 - Convenience in ordering
 - No need to plan and order a big batch. Order just when needed. No need to spend immediately a big part of the budget
 - No need to test batch samples
 - Saves time, money and frustration
 - Standardization
 - It is possible to repeat earlier achieved results, under exactly the same conditions
 - It is easier to share and compare results with colleagues world wide
- **XF is fully defined**
 - Since XF doesn't contain cytokines, enzymes or hormones, it is possible to do studies on these in known concentrations without unexpected interactions

Academic research

- XF can be stored in the refrigerator
 - Since XF doesn't contain cytokines, enzymes or hormones, it is possible to do studies on these in known concentrations without unexpected interactions
- XF is universal applicable for all human and mammal cell types, including stem cells and primary cells
 - No need to order a huge number of different serum free alternatives (competition) for every different cell line in use

Cell Banks

- Cell banks you will find in academic and governmental institutes and in biopharma industry
- XF is universal applicable for practically all human and mammal cell types, including stem cells and primary cells
 - No need to order a huge number of different serum free alternatives (competition) for every different cell line in use



XerumFree™

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