

User Guide FCS-free Database | fcs-free.org

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Database content

The FCS-free Database lists FCS-free media, available for specific cell lines or cell types. Some media are designed to support a particular cell type but may support a wider range of cells.

By default, the database shows the columns *cell line/type*, *species*, *product*, *animal free* and *source*. You can edit the columns shown by clicking the 'Edit column views' button on the top right corner of the database. You can also sort the results by a specific column by clicking on the column name. Furthermore, it is possible to export the search results into an CSV-file. To accomplish this, use the 'Export to CSV' button on the top right corner of the database. NOTE: If you export the results into Excel, all results from multiple columns end up in one column. Make sure to use the 'text to columns' button in order to separate the contents of one cell into separate columns.

The screenshot displays the FCS-free Database interface. At the top, it says 'FCS-free Database' and '24 items found, displaying all items'. There are buttons for 'Edit column views', 'Export as CSV', and 'Help'. Below this is a table with the following columns: 'cell line/type', 'species', 'product', 'animal free', 'source', and 'Compare'. The table lists various cell lines and media, such as 'Babesia bovis', 'breast cell lines', 'Epidermal-like cells', 'Prostate tissue epit...', '267-B1 (immortaliz...', 'PC-3 (Prostatic can...', 'Cardiomyocytes (iP...', 'iPSc differentiated ...', 'HEK-293', 'Multiple/General ce...', 'HepG2/C3A (Huma...', and 'Motoneurons'. Each row has a checkbox in the 'Compare' column. On the left side, there are filters for 'Animal free' and 'Product' with checkboxes and counts.

Cell line/type	species	product	animal free	source	Compare
Babesia bovis	Babesia bovis	A-DMEM/F12	Unspecified	Literature / recipe b...	<input type="checkbox"/>
breast cell lines	Human	BRFF-BMZERO™	Unspecified	AthenaES	<input type="checkbox"/>
Epidermal-like cells	Human	BRFF-EPM2™	Unspecified	AthenaES	<input type="checkbox"/>
Prostate tissue epit...	Human	BRFF-HPC1™	Unspecified	AthenaES	<input type="checkbox"/>
267-B1 (immortaliz...	Human	BRFF-P4-8F™	Unspecified	AthenaES	<input type="checkbox"/>
PC-3 (Prostatic can...	Human	BRFF-P4-8F™	Unspecified	AthenaES	<input type="checkbox"/>
Cardiomyocytes (iP...	Human	CDI cardiac plating ...	Unspecified	Literature / recipe b...	<input type="checkbox"/>
iPSc differentiated ...	Human	CDI neuronal platin...	Unspecified	Literature / recipe b...	<input type="checkbox"/>
HEK-293	Human	CDM	Yes	Literature / recipe b...	<input type="checkbox"/>
Multiple/General ce...	Human	DMEM F/12	No	AthenaES	<input type="checkbox"/>
HepG2/C3A (Huma...	Human	HepG2/C3A DMEM	Unspecified	Literature / recipe b...	<input type="checkbox"/>
Motoneurons	Human	hSCSC Growth me...	Unspecified	Literature / recipe b...	<input type="checkbox"/>

Filter definitions

Cell line/type

The cell line/type filter is the main entry of the database. It enables you to search for products that are available for specific cell lines or cell types. Multiple products may be available for one cell type. Common, commercially available cells are often abbreviated, whereas primary cell lines are written out. Once you click on 'please select a cell line/type', you can start typing a cell type and the results will be shown in a drop-down menu. Then, click on a cell type to see the products that match with it.

Animal free

All products in this database are FCS-free. Media that are entirely free of animal-derived components are listed as animal free. You can choose this factor as a filter in your search. Note: human-derived components, such as human platelet lysates, are considered animal free in this database, except when it concerns human serum.

Product

The product filter corresponds with the name of the product. The product name is the unique value in this database. A product can be available for multiple cell lines. If the product concerns a recipe obtained from literature that is not based on a commercial product, the product name is the author (year) of the corresponding publication.

Source

The source filter allows you to choose between companies that produce FCS-free media, or to choose a product that is described in scientific literature.

Species

The species filter enables you to select for which species and/or cell types the product is tested.

Parameters

In addition to the filters stated above, the parameter filter provides extra possibilities to narrow your search. The parameter filter contains sub-filters which become visible after clicking on the funnel sign behind the parameter name. Parameter lists are in alphabetical order. Parameters included in the database are:

- *Antibiotics free*: If you click the funnel next to this filter, you can choose to show only products that are known to be either antibiotics free or not.
- *Chemically defined*: If you click the funnel, you can choose to show only products that are either chemically defined or not.

FCS-free Database

24 items found, displaying all items

Cell line/type Clear filters [cell line/type](#) [species](#)

please select a cell line/type...

+ Animal free

+ Product

+ Source

+ Species

- Parameters

Antibiotics free (1) 🔍

Chemically defined (1) 🔍

Contains phenol red (1) 🔍

[Toggle all](#)

cell line/type	species
Babesia bovis	Babesia b
breast cell lines	Human
Epidermal-like cells	Human
Prostate tissue epit...	Human
267-B1 (immortaliz...	Human
PC-3 (Prostatic can...	Human
Cardiomyocytes (IP...	Human
iPSc differentiated ...	Human
HEK-293	Human

- *Contains phenol red*: If you click the funnel, you can choose to show only products that are known to either contain phenol red or not.

Use of filters and filter options

When no filter has been selected yet, a screen with a selection of default results is shown. You can start a search by selecting a cell line. Only one cell line can be selected at the time. After making the cell line selection, different species, products, information sources animal free status and parameters can be selected.

After selecting a filter item, the other filters available (number of records, available conditions and parameters) will be adjusted to this. For example: when choosing the cell line 'astrocyte' and species 'human', only parameters and conditions which are applicable to this selection are shown in the filter lists. Behind each filter item, the number of available results is displayed between brackets.

The filter options of the FCS-free Database make it possible to compare parameter values of multiple products. To clear all selected filters, click 'Clear filters'.

The screenshot shows the FCS-free Database interface. At the top, it says "FCS-free Database" and "5 items found, displaying all items". There are links for "Edit column views", "Export as CSV", and "Help". Below this is a table with columns: "cell_line/type", "species", "product", "animal free", "source", and "Compare". The table contains 5 rows of data. To the left of the table are filter options for "Cell line/type", "Animal free", "Product", "Source", "Species", and "Parameters". A red arrow points to the "Yes (5)" option under the "Animal free" filter.

cell_line/type	species	product	animal free	source	Compare
HEK-293	Human	CDM	Yes	Literature / recipe b...	<input type="checkbox"/>
Embryonic cells	Cow	Moreno et al (2015)	Yes	Literature / own reci...	<input type="checkbox"/>
HCE-T and HCK (c...	Human	Pan+	Yes	Literature / recipe b...	<input type="checkbox"/>
L929 cells	Mouse	Wiest (2017)	Yes	Literature / own reci...	<input type="checkbox"/>
UCMSC	Human	Wu et al (2016)	Yes	Literature / own reci...	<input type="checkbox"/>

Filters:

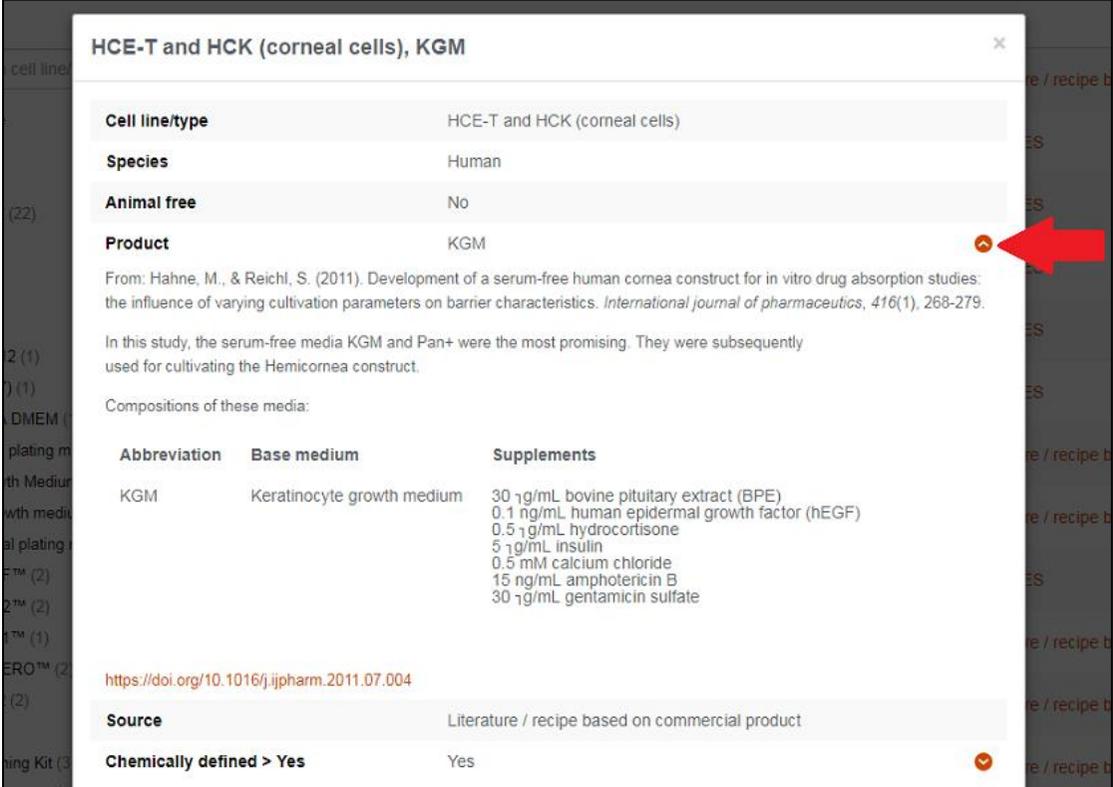
- Cell line/type: please select a cell line/type...
- Animal free:
 - Yes (5)
 - No (10)
 - Unspecified (22)
 - [Toggle all](#)
- Product:
 - Wu et al (2016) (1)
 - Pan+ (1)
 - CDM (1)
 - Moreno et al (2015) (1)
 - Wiest (2017) (1)
 - [Toggle all](#)
- Source:
 - Literature / own recipe (3)
 - Literature / recipe based on commercial product (2)
 - [Toggle all](#)
- Species
- Parameters

Presentation of results

Results of the filter selection are displayed in the results screen next to the filters. The filter names are displayed as titles of the columns. With 'edit column views', you can choose which filters or parameters are displayed in the results screen. By clicking on the column title, the results can be sorted on a particular filter.

Long texts in the results screen are shortened, indicated by dots. When moving the mouse over the text, the full text appears.

By clicking anywhere on a result, a pop-up window will appear with more detailed information. In this pop-up window all parameters which are available for the selected combination (cell line/type, species, animal free, product, source, and other parameters) are shown. For each product, more detailed product information is available by clicking on the red arrow next to the product value. In case of commercially available products, this information also provides an URL to the website of the product supplier.



HCE-T and HCK (corneal cells), KGM

Cell line/type	HCE-T and HCK (corneal cells)	
Species	Human	
Animal free	No	
Product	KGM	

From: Hahne, M., & Reichl, S. (2011). Development of a serum-free human cornea construct for in vitro drug absorption studies: the influence of varying cultivation parameters on barrier characteristics. *International journal of pharmaceutics*, 416(1), 268-279.

In this study, the serum-free media KGM and Pan+ were the most promising. They were subsequently used for cultivating the Hemicornea construct.

Compositions of these media:

Abbreviation	Base medium	Supplements
KGM	Keratinocyte growth medium	30 µg/mL bovine pituitary extract (BPE) 0.1 ng/mL human epidermal growth factor (hEGF) 0.5 µg/mL hydrocortisone 5 µg/mL insulin 0.5 mM calcium chloride 15 ng/mL amphotericin B 30 µg/mL gentamicin sulfate

<https://doi.org/10.1016/j.ijpharm.2011.07.004>

Source	Literature / recipe based on commercial product	
Chemically defined > Yes	Yes	

Comparing results

To compare results, tap the boxes at the end of each row and click on 'compare'. The compare screen will appear. In this screen, the filter titles and parameters are shown in rows and the cell line - product combination in columns.

The rows in the compare screen can be locked, so they will stay in position when scrolling up or down.

More detailed information on the results (such as reference and remark) become visible by clicking on the cell line - product combination at the top of each column. The same pop-up window as in the results screen appears.

When all results in a row are equal, this row will be green. This way, you can see on what details two or more cell line - product combinations differ or resemble each other.

By clicking 'back to overview', you return to the results screen. All selections remain and no results are removed.

Removing results can be done by clicking 'remove' in the compare screen or tapping the boxes in the results screen again (deselecting them). Without doing this, in another selection session (even when clicking 'reset defaults') the results will still

Compare

Comparing 3 items [Back to overview](#) [Export as CSV](#) [Help](#)

	Remove ✕ Multiple/General cell lin...	Remove ✕ Multiple/General cell lin...	Remove ✕ Multiple/General cell lin...
Cell line/type	Multiple/General cell lines	Multiple/General cell lines	Multiple/General cell lines
Species	Human	Human	Human
Product url	http://www.athenaes.com/DMEM.php	http://www.athenaes.com/IMDM.php	http://www.athenaes.com/SFMScreeningKit.php
Product description	<p>DMEM F12</p> <p>Serum-Free Media</p> <p>Ready-to-use with L-glutamine, Hepes, BPE and EGF Designed to culture wide range of cells Complete serum-free medium Antibiotic-free</p> <p>DMEM/F12 is a serum-free medium formulation for general use. This formulation is a 1:1 blend of DMEM and Ham's F12 media supplied complete, ready to use with L-glutamine, Hepes, BPE and EGF for culturing a wide range of cell types. DMEM/F12 does not contain phenol red or antibiotics.</p> <p>Product page last accessed: 2017-07-25</p>	<p>IMDM</p> <p>Serum-Free Media</p> <p>Supplemented with BPE and EGF Complete serum-free medium Antibiotic-free</p> <p>Iscove's Modified Dulbecco's Medium (IMDM) is a standard serum-free medium. It is supplemented with BPE and EGF and contains L-glutamine, Hepes and phenol red but no antibiotics.</p> <p>Product page last accessed: 2017-07-25</p>	<p>SFM Screening Kit</p> <p>Serum-Free Media</p> <p>Samples of 5 of the AthenaES™ Serum-Free Cell Culture Media Includes FNC Coating Mix®</p> <p>Storage: Store at -80°C</p> <p>Stability at 4°C: 4 - 6 weeks</p> <p>pH: 7.3 ± 0.2</p> <p>Osmolality: 270 - 300 mOsm</p> <p>The SFM Screening Kit is intended for researchers seeking to identify the most appropriate SFM formulation for a specific cell type. The kit contains a 100mL sample of each of five serum-free media including: BRFF-BMZERO™, BRFF-EPM2™, BRFF-P4-8F™,</p>

appear in the compare screen and multiple selection sessions can be compared. Selected results can be definitely removed by refreshing the internet browser.