

Introduction to Research

Operating Systems Practical

October 22, 2014

Finding Relevant Publications

Managing Bibliography

Writing Papers

Questions

Finding Relevant Publications

Managing Bibliography

Writing Papers

Questions

- ▶ Use an online database
 - ▶ Google Scholar - <http://scholar.google.com/>
 - ▶ IEEE Explore - <http://ieeexplore.ieee.org/>
 - ▶ ACM Digital Library - <http://dl.acm.org/>
 - ▶ Microsoft Academic Search -
<http://academic.research.microsoft.com/>
- ▶ Search for keywords relevant to your research topic
 - ▶ E.g. android virtualization, high availability
- ▶ Select the most recent papers on the topic

Finding Relevant Publications

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Questions

- ▶ Mendeley - <http://www.mendeley.com/>
 - ▶ Reference manager
 - ▶ Collaboration tool
 - ▶ Academic social network
- ▶ Managing Bibliographic References
 - ▶ Adding publications
 - ▶ Managing publications
 - ▶ Annotating and highlighting
 - ▶ Sharing references
 - ▶ Exporting bibliography

The screenshot shows the Mendeley Desktop application window. The interface includes a top toolbar with actions like 'Add Documents', 'Delete Documents', 'Remove from Collection', 'Create Folder', 'Remove Folder', and 'Sync Library'. On the left is a sidebar with 'My Library' and a 'Filter by My Tags' section. The main area displays a list of documents with columns for Authors, Title, Year, Published In, Added, and Details. On the right, a detailed view of a selected document is shown, including its title, authors, and various identifiers.

Set up and manage your reference groups

Library showing all your documents (citation or table view)

Add tags & notes and edit document details

Filter your papers by authors, keywords, tags, or publications

Authors	Title	Year	Published In	Added
Reveda-Parada, G	Cotransplantation of human stromal cell	2000	Cell	3/7/09
Bai, L. M.; Bernard	Cotransplantation of ex vivo expanded	2007	Blood	4/5/09
Bai, L.; Bredius, R.; L.	Third party mesenchymal stromal cell	2007	Leukemia	3/22/09
Barrett, A John; Leb...	Prophylaxis of acute GVHD: manipulate the	2008	Best Practice & Research ...	4/5/09
Saxholmen, Axel	Mesenchymal stem cells suppress lymphocyte	2002	Hematology	4/5/09
Bernard, J. M.; Ford	Human stromal cell transplantation: the	2004	Journal of ...	4/7/09
Blanco, Paolo; RIME	Bone Marrow Stromal Stem Cells: Nature,	2001	Stem Cells	3/7/09
Blanc, Katarina Le; ...	Articles Mesenchymal stem cells for treatment	2008	The Lancet	4/5/09
Blanc, Katarina	Articles Mesenchymal stem cells for treatment	2008	The Lancet	4/5/09
Chan, Rachel W S; ...	Clonogenicity of Human Endometrial Epithelial	2004	Biotechnology	3/7/09
Colter, David C; Gao	Rapid expansion of recycling stem cells in	2000	Proc. Natl. Acad. Sci. U...	3/7/09
DENNIS, JAMES E.; J	Origin and Differentiation of Human and	2002	Stem Cells	3/7/09
Ethridge, S. Leigh	Expression Profiling and Functional Analysis	2004	Stem Cells	3/22/09
Prohász, Merges Gr	Tissue engineered bone grafts: biological	2008	Current stem cell research	9/15/09
Gronthos, S; Grave...	The STRO-1+ fraction of adult human bone	1994	Blood	3/7/09

Details:

Type: Journal Article
 Articles Mesenchymal stem cells for treatment of steroid-resistant, severe, acute graft-versus-host disease: a phase II study
 Authors: K. Blanc, F. Frasson, L. Bai et al.
 Year: 2008
 Volume: 371
 Issue:
 Pages: 1579-1586

Tags:

Keywords:

Citation Key:

URL:

Catalog IDs:

The screenshot shows the Mendeley Desktop application window. The 'File' menu is open, showing options like 'Add Files...', 'Add Folder...', 'Watch Folder...', 'Export...', 'Delete Documents', 'Remove from Collection', 'Rename Document Files...', 'Synchronize Library', and 'Quit'. A search bar is visible at the top right. The main pane displays a list of papers with columns for star status, file icon, title, journal, year, and date added. A right-hand pane shows details for a selected paper: 'Articles Mesenchymal stem cells for treatment of steroid-resistant, severe, acute graft-versus-host disease: a phase II study' by K. Blanc, F. Frasson, L. Bail et al. from 'The Lancet', 2008.

You have different options to set up your library:

- Add single files or an entire folder
- “Watch a folder” to automatically import PDF files
- Drag and drop PDFs into Mendeley Desktop

...and Mendeley will try to extract the document details automatically

You can also:

- Add existing EndNote/BibTeX/RIS databases
- Sync with other reference management webapps
- Use Mendeley Web Importer to add from online databases
- Add from the Mendeley Research Catalog

Details
Notes

Year: 2008

Volume: 371

Issue:

Pages: 1579-1586

Abstract:

Tags:

Keywords:
autoimmune; GVHD; MSC

Citation Key:
Blanc2008

URL:
Add URL...

Catalog IDs

ArXiv ID:

DOI:

PMID: 18468541

Files:
Blanc et al. - 2008

Add File...

Enter the DOI, PubMed, or ArXiv ID and click on the magnifier glass to start lookup

Missing info is added automatically

Details
Notes

haemopoietic-stem-cell transplantation. METHODS: Patients with steroid-resistant, severe, acute GVHD were treated with mesenchymal stem cells, derived with the European Group for Blood and Marrow transplantation ex-vivo expansion procedure, in a multicentre, phase II experimental study. We recorded response, transplantation-related deaths, and other adverse events for up to 60 months' follow-up from infusion of the cells. FINDINGS: Between October, 2001, and January, 2007, 55 patients were treated. The

Tags:

Keywords:
Adult; Child; Female; Follow-Up Studies; Graft vs Host Disease; Graft vs Host Disease: classification; Graft vs Host Disease: mortality; Graft vs Host Disease: therapy; Hematopoietic Stem Cell Transplantation; Hematopoietic Stem Cell Transplantation: adverse effects; Histocomp...

Citation Key:
Blanc2008

URL:
 <http://www.ncbi.nlm.nih.gov/pubmed/18468541>

Add URL...

Catalog IDs

ArXiv ID:

DOI: 10.1016/S0140-6736(08)60690-X

PMID: 18468541

Files:
 Blanc et al. - 2008 - Artides Mesenchymal stem cell...

Add File...

My Library

- All Documents
- Recently Added
- Favorites
- CiteULike
- Needs Review
- My Publications
- Unsorted
- Automatically Imported
- Biosensor
- CSCs Biology
- Data citation
- Data reuse
- Data sharing and withholding
- Elsevier Grand Challenge for the Life S...
- Embryonic Stem Cells
- graph related
- iPSCs Biology
- linked data
- MSC Biologv

Filter by My Tags

- Filter by Author's Keywords
- Filter by Authors
- Filter by My Tags
- Filter by Publications

- autoimmune
- baboon
- biomarker
- bone
- bone marrow
- cartilage

MSC Biology

Open attached PDF files in integrated viewer

★	●	📄	Authors		Year	Published In	Added
☆	●	📄	Almeida+Orada, Gr...	Cotransplantation of human stromal cell progenitors into preimmune fetal sheep resu...	2000	Cell	3/7/09
☆	●	📄	Ball, L. M.; Bernard...	Cotransplantation of ex vivo expanded mesenchymal stem cells accelerates lympho...	2007	Blood	4/5/09
☆	●	📄	Ball, L; Breake...		2008		22/09
☆	●	📄	Barrett, A John; Leb...	Prophylaxis of acute GVHD: manipulate the graft or the environment?	2008	Best Practice & Research ...	4/5/09
☆	●	📄	Bartholomew, Ameli...	Mesenchymal stem cells suppress lymphocyte proliferation in vitro and prolong skin graft s...	2002	Hematology	4/5/09
☆	●	📄	Bensidhoum, Morad...	Homing of in vitro expanded Stro-1- or Stro-1 + human mesenchymal stem cells int...	2004	Journal of Clinical Onco...	3/7/09
☆	●	📄	Bianco, Paolo		2001	Stem Cells	3/7/09
★	●	📄	Blanc, Katarina; ...	Mesenchymal stem cells for treatment of steroid-resistant, severe, acute graft-vers...	2008	Lancet	4/5/09
☆	●	📄	Blanc, Katarina Le; ...	Treatment of severe acute graft-versus-host disease with third party haploidentical mese...	2004	The Lancet	4/5/09
☆	●	📄	Chan, Rach...				
★	●	📄	Colter, David C; Clas...	Rapid expansion of recycling stem cells in cultures of plastic-adherent cells from huma...	2000	Proc. Natl. Acad. Sci. U...	3/7/09
☆	●	📄	DENNIS, JAMES E.; ...	Origin and Differentiation of Human and Murine Stroma	2002	Stem Cells	3/7/09
☆	●	📄	Etheridge, S. Leah; ...	Expression Profiling and Functional Analysis	2004	Stem Cells	3/22/09

Documents can be marked read/unread

Star your favorite papers

Filter by authors, tags, publications or keywords

The screenshot displays the SOA Paper Crunch application interface. At the top, a search bar contains the text "Q* bone". Below the search bar, a toolbar includes icons for "Add Documents", "Delete Documents", "Remove from Collection", "Create Folder", "Remove Folder", and "Sync Library".

The main window is divided into three panes:

- Left Pane (My Library):** Lists various document categories such as "All Documents", "Recently Added", "Favorites", "CiteULike", "Needs Review", "My Publications", "Unsorted", "Automatically Imported", "Biosensor", "CSCs Biology", "Data citation", "Data reuse", "Data sharing and withholding", "Elsevier Grand Challenge for the Life Sciences", "Embryonic Stem Cells", "graph related", "PSCs Biology", "linked data", and "MSC Biology". A "Filter by My Tags" dropdown is also present, listing tags like "All", "aging", "allergy", "asthma", "autoimmune", "baboon", "biomarker", "bone", "bone marrow", "cartilage", "cellular therapy", "differentiation", "Dkk1", and "FAF".
- Center Pane (Search Results):** Displays results for "bone" in the "MSC Biology" library. The results are listed with star icons, document icons, and titles. The first result is "Circulating Skeletal Stem Cells" by Sergei A. Kuznetsov et al. (2001). Other results include "Bone Marrow Stromal Stem Cells: Nature, Biology, and Potential Applications" by Paolo Bianco et al. (2001), "Molecular and cellular characterisation of highly purified stromal stem cells derived from human bone marrow" by Stan Gronthos et al. (2003), "Clonogenicity of Human Endometrial Epithelial and Stromal Cells 1" by Rachel W S Chan et al. (2004), "Origin and Differentiation of Human and Murine Stroma" by James E. Dennis et al. (2002), "Homing of in vitro expanded Stro-1- or Stro-1 + human mesenchymal stem cells into the NOD/SCID mouse and their role in supporting human CD34 cell engraftment" by Morad Benishouh et al. (2004), "Plasticity of marrow-derived stem cells" by Erica L Herzog et al. (2003), and "Cotransplantation of human stromal cell progenitors into preimmune fetal sheep results in early appearance of human donor cells in circulation and boosts cell levels in bone marrow at later time points after transplantation" by Gracia Almeida-Porada et al. (2000).
- Right Pane (Details):** Provides details for the selected document, "Circulating Skeletal Stem Cells". It includes fields for "Year: 2000", "Volume: 97", "Issue: 7", and "Pages: 3213-3218". The "Abstract:" section is empty. The "Tags:" section is empty. The "Keywords:" section lists "CFU-F; marrow stromal cells; MSC". The "Citation Key:" section lists "Colter 2000". The "URL:" section lists "Add URL...". The "Catalog IDs" section lists "ArXiv ID:", "DOI: 10.1073/pnas.070034097", and "PMID:". The "Files:" section lists "Colter et al. - 2000 - Rapid expansion of recycling ...".

My Library Treatment of severe a...

Adult bone-marrow-derived mesenchymal stem cells are immunosuppressive and prolong the rejection of mismatched skin grafts in animals. We transplanted haploidentical mesenchymal stem cells in a patient with severe treatment-resistant grade IV acute graft-versus-host disease of the gut and liver. Clinical response was striking. The patient is now well after 1 year. We postulate that mesenchymal stem cells have a potent immunosuppressive effect in vivo.

Lancet 2004; 363: 1439-41
See Commentary page 1411

Severe acute graft-versus-host disease (GVHD) after allogeneic stem-cell transplantation is associated with high mortality. Bone marrow contains pluripotent mesenchymal stem cells that form bone, cartilage, adipose tissue, and muscle. These stem cells are not immunogenic and escape recognition by alloreactive T cells and natural killer cells. Mesenchymal stem cells given intravenously have been well tolerated. Furthermore, they are immunosuppressive and inhibit the proliferation of alloreactive T cells. Preliminary reports of a total of 22 days, mycophenolate mofetil, and methotrexate were also tried. By day 70, the patient had developed grade IV acute GVHD, including diarrhoea up to 20 times daily, and a bilirubin concentration of 250 mmol/L. He was treated for repeated bacterial, viral, and invasive fungal infections.

We chose the mother as donor, because she was readily available and because MHC-compatibility is not necessary for mesenchymal stem-cell immunosuppression.¹ After ethics-committee approval and informed consent, mesenchymal stem cells were isolated as previously described.¹ Briefly, we isolated mononuclear cells from a bone marrow aspirate by Percoll gradient centrifugation (Sigma, St Louis, MO, USA). The cells were plated at a density of 3×10^5 cells per 175 cm² in polystyrene flasks in low glucose Dulbecco's modified Eagle's medium (Life Technologies, Gaithersburg, MD, USA), supplemented with 10% fetal

Highlighted by you at 3:24:55 PM on Saturday, October 16, 2010 [day] for 4 days). Immunosuppression included thymoglobulin (6 mg/kg) during the conditioning, followed by cyclosporin combined with four doses of methotrexate. On day 11 after allogeneic stem-cell transplantation, the patient developed a maculopapular rash of the thorax and back that progressed despite treatment with prednisolone (2 mg/kg daily). By day 22, the patient developed diarrhoea (>1000 mL per day) and abdominal pain requiring morphine. He stopped eating on day 24. Bilirubin and alanine aminotransferase concentrations rose (figure 1). Psoralen and ultraviolet-A light (PUVA) treatment (two to three times per week) for 3 weeks was followed by extracorporeal PUVAs (one to four times per week) for 6 weeks. Infliximab (10 mg/kg) and daclizumab (1 mg/kg) for 4 weeks were ineffective

10/16/2010 3:26:12 PM
See Gregory et al. 2004

MSC $\times 10^5$ /kg
Bilirubin
Stools

300
250
200
150
100
50
0

25
20
15
10
5
0

Number of stools per day

Details Notes

Annotations:

You 10/16/2010 3:25:52 PM
See Gregory et al. 2004



Groups can be private or public (invite only or open)

Search: Type here to search

Creatively named research papers, owned by [stephen croome](#) [Edit Settings](#)

Overview Documents (32) Members

What's on your mind?

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 Yesterday - comment - like
[Victor Henning](#) likes this.

Ricardo Vidal added a document to this group
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Dinner at Baby's: Werewolves, dinosaur jaws, hen's teeth, and horse toes
Cloning and functional analysis of 5'-upstream region of the Pokemon gene.
 14th October - comment - like

William Gunn added a document to this group
Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials.
 14th October - comment - like
[Ricardo Vidal](#), [Sjúrður Hammer](#) and [Victor Henning](#) like this.

About this group
 Research papers with bombastic or interesting titles.*** This is an Open, publicly visible group and everyone can contribute. Its great for open discussion around a subject.*** The alternative was an Invite-only group which is publicly visible, but the creator decides who can contribute; great for public reading lists or curating your lab's research output

Owned by **stephen croome**
 Economics

31 members [show all](#)

<http://www.mendeley.com/groups/536621/creatively-named-research-papers/>

[Email to colleagues](#)

Public groups only have the reference details – no full text. Private groups contain the full text including notes & annotations.

View the group online – other users can request to join or simply follow the activity of the group

Create Group...

Group name

Group description

Privacy settings

☒ **Private** Share references + files
Not visible to the public; great for private research projects

☐ **Public** Share references only

☐ **Invite-only**
Publicly visible, but you decide who contributes; great for public reading lists or curating your lab's research output

☒ **Open**
Publicly visible, everyone can contribute; great for open discussion groups around any subject

[Add additional info](#) (e.g. tags, disciplines)

Create Group **Cancel**

Private groups contain the full text.

Public groups share references only.

Finding Relevant Publications

Managing Bibliography

Writing Papers

Questions

- ▶ Text processor (not editor)
 - ▶ TeX = programming language
 - ▶ LaTeX = set of macros for TeX
- ▶ Useful for generating
 - ▶ books, articles, presentations, CVs, etc.
- ▶ The good things:
 - ▶ Plain text source (versioning)
 - ▶ Allows focusing on content
 - ▶ Good-looking math formulas
- ▶ The bad things:
 - ▶ Not WYSIWYG
 - ▶ New/Extra commands to remember
 - ▶ Cryptic error messages

- ▶ LaTeX resources:
 - ▶ <http://en.wikibooks.org/wiki/LaTeX/> - Wiki Book
 - ▶ <http://tex.stackexchange.com/> - Questions & Answers
- ▶ Template for IEEE conferences = IEEEtran
 - ▶ <http://mirror.ctan.org/macros/latex/contrib/IEEEtran.zip>
 - ▶ bare_conf.tex (for conferences)

- ▶ Comments start with the % character
- ▶ New functionalities can be added by including packages using by using `\usepackage` before `\begin{document}`

```
\usepackage{lipsum} % allows inserting paragraphs  
                    % from Lorem Ipsum
```

```
...  
\lipsum[20]         % inserts the 20th paragraph  
\lipsum[10-14]      % inserts paragraphs from 10 to 14
```

- ▶ table environment – parameter: wanted table position(s) (h = here, t = top...)
- ▶ tabular environment – describes column alignment, vertical lines
 - ▶ Column separator: &
 - ▶ Line separator: \\

```
\begin{table}[h]
    \caption{An Example of a Table}
    \label{table:table_example}
    \centering
    \begin{tabular}{|c|c|}
        \hline
        One & Two \\
        \hline
        Three & Four \\
        \hline
    \end{tabular}
\end{table}
```

- ▶ `\usepackage{booktabs}`
 - ▶ Using `\toprule` `\cmidrule` `\midrule` `\bottomrule`
- ```

\begin{table}[h]
 \caption{An Example of a Table}
 \label{table:table_example}
 \centering
 \begin{tabular}{llr}
 \toprule
 \multicolumn{2}{c}{Item} \\
 \cmidrule(r){1-2}
 Animal & Description & Price (\$) \\
 \midrule
 Gnat & per gram & 13.65 \\
 & & & each & 0.01 \\
 Gnu & stuffed & 92.50 \\
 Emu & stuffed & 33.33 \\
 Armadillo & frozen & 8.99 \\
 \bottomrule
 \end{tabular}
\end{table}

```

- ▶ Vector graphic vs. Bitmap
- ▶ PDFs are preferred
- ▶ ensure `\usepackage{graphicx}` is in the .tex file
- ▶ figure environment – parameter: wanted figure position(s)
- ▶ includegraphics command – multiple options
- ▶ scale, width, height

```
\begin{figure}[h]
 \centering
 \includegraphics[width=3.5in]{path2file_no_extension}
 \caption{My Super Plot} % caption below figure
 \label{fig:my-figure} % label must be below caption
\end{figure}
```

- ▶ A lot is possible:
  - ▶ <http://en.wikibooks.org/wiki/LaTeX/Mathematics>
  - ▶ [http://en.wikibooks.org/wiki/LaTeX/Advanced\\_Mathematics](http://en.wikibooks.org/wiki/LaTeX/Advanced_Mathematics)

- ▶ Inline formulas – between  $\$ \dots \$$

$\$ \text{\texttt{\textbackslash forall } x \text{\texttt{\textbackslash in } X, \text{\texttt{\textbackslash quad } \text{\texttt{\textbackslash exists } y \text{\texttt{\textbackslash leq } \text{\texttt{\textbackslash epsilon } } } } } } \$$

- ▶ equation environment

```
\begin{equation}
 \label{eq:my_formula}
 L' = \{L\}\{\text{\texttt{\textbackslash sqrt}{1-\text{\texttt{\textbackslash frac}{v^2}{c^2}}}}\}
\end{equation}
```

- ▶ Two modes of including bibliography
  - ▶ (not recommended) embedded entries – thebibliography env.
  - ▶ external BibTeX file

- ▶ Commands for including & generating the bibliography

```
\bibliographystyle{IEEEtran}
\bibliography{comma-separated-list-of-bib-files}
```

- ▶ Commands for citing

```
\cite{bib_entry}
\cite{bib_entry1, bib_entry2...}
```



## ► Adding labels around the document

```
\section{Section Name}
\label{sec:label_name}
```

```
\begin{table}
\label{table:table_label_name}
...
\end{table}
```

## ► Referencing labels

```
\ref{sec:label_name}
\ref{table:table_label_name}
\ref{fig:my_figure}
\ref{eq:eq:my_formula}
```

- ▶ 1st pass: extract information about bibliography
  - ▶ `pdflatex bare_conf.tex`
- ▶ BibTex: build list of references
  - ▶ `bibtex bare_conf`
- ▶ 2nd pass: include bibliography, extract position of the references
  - ▶ `pdflatex bare_conf.tex`
- ▶ 3rd pass: match references with bibliographic entries
  - ▶ `pdflatex bare_conf.tex`

- ▶ Document Processor for LaTeX
- ▶ Open Source
- ▶ Runs on Linux/Unix, Windows, Mac OS X
- ▶ Graphical interface
  - ▶ What You See Is What You Mean (WYSIWYM)
  - ▶ Writing based on the structure of documents, not on appearance
- ▶ Includes standard formats and templates
- ▶ Integrated equation editor
- ▶ Table editor
- ▶ Emacs-style version control interface for collaborative projects
- ▶ Basic change tracking

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?