

Stem cells from menstrual blood in Twitter: social attention on social media

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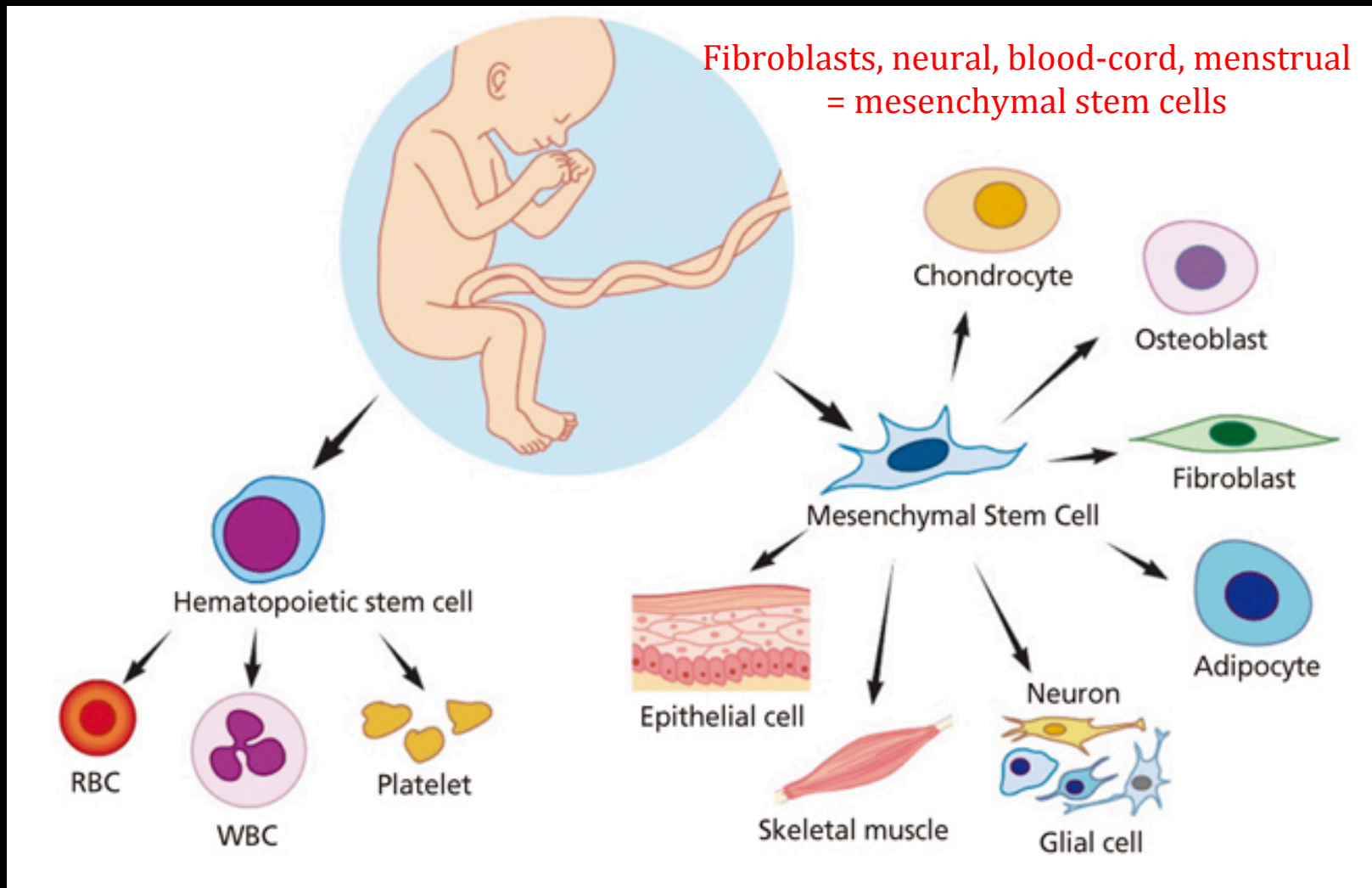
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Photomicrography of mesenchymal cells from menstrual blood in hypoxia and absence of nutrients. By Karina Asensi (Manica, 2019)

Mesenchymal stem cells



Reprogramming human cells by inducing genes of pluripotent cells to use in regenerative medicine. Image CC By-NC-3.0 (Lee 2018)

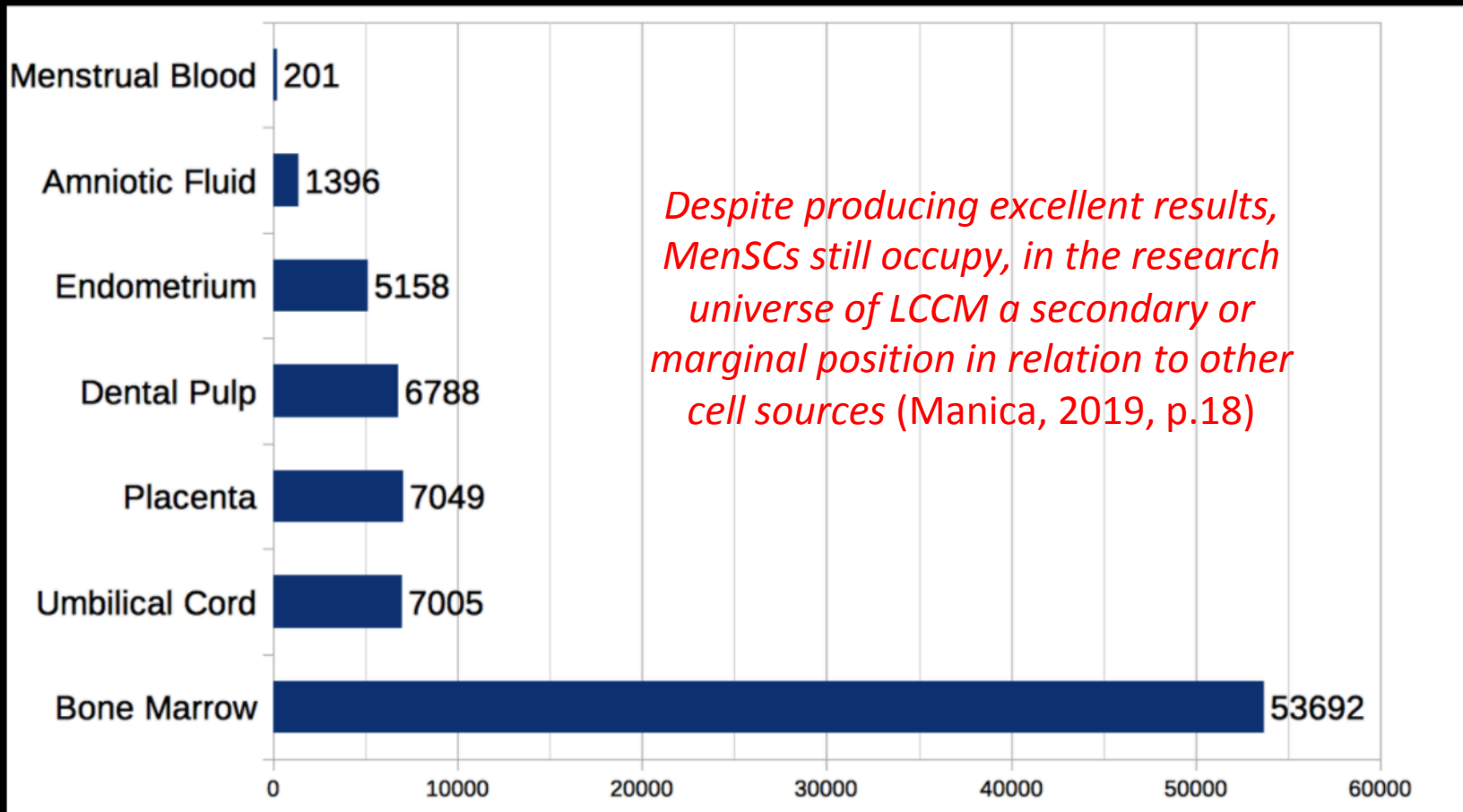
Menstrual blood derived stem cells (MenSCs)

- ✓ Reprogramming between 7-15 days
- ✓ Faster and higher efficiency than other stem cell
- ✓ Cheaper and use of disposal material

➤ More invasive procedure

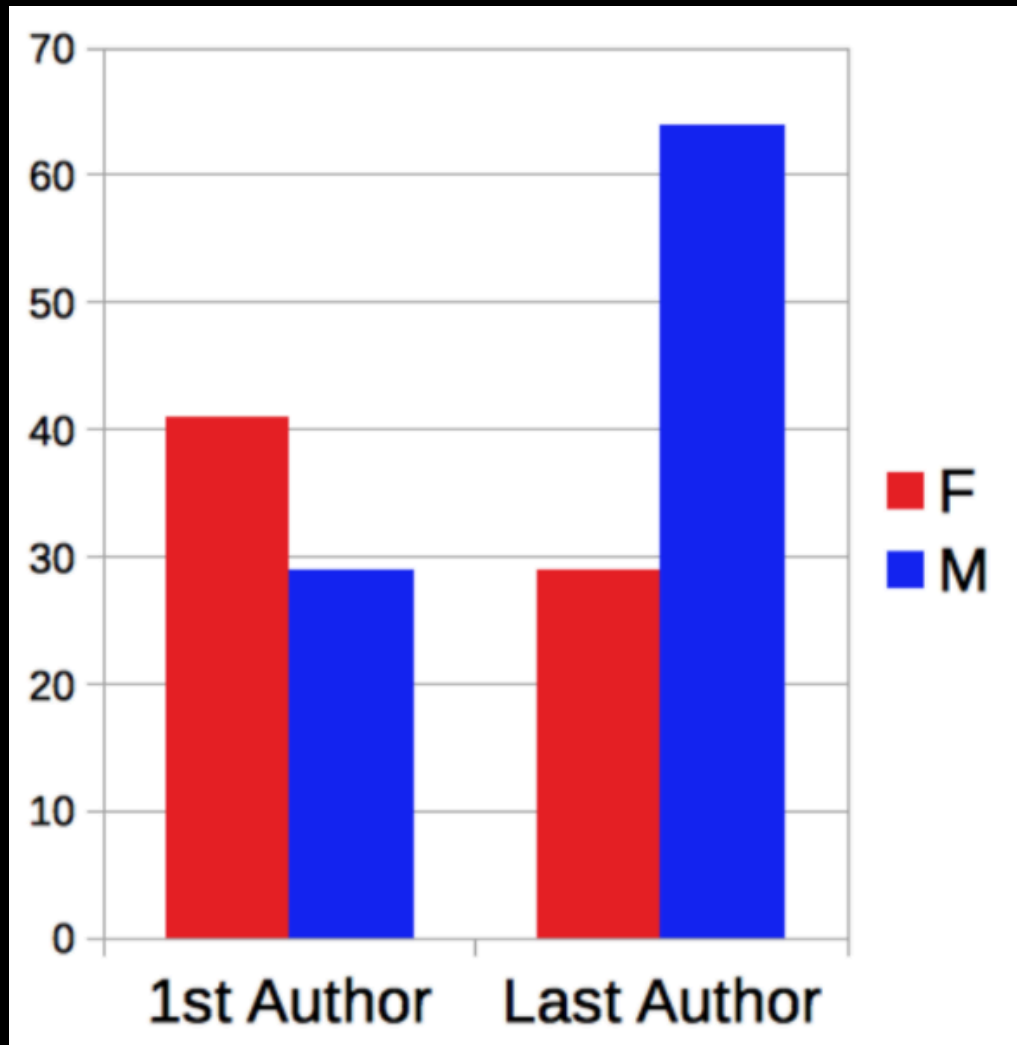
Photomicrography of mesenchymal cells from menstrual blood (left) and bone marrow (right) in hypoxia and absence of nutrients. *Manica (2019)*

Papers at PubMed (2008-2018)



81,289 papers about different mesenchymal cells on PubMed 2008-2018. Manica (2019)

Gender of authors of MenSCs PubMed (2008-2018)



Women*
1st authors 58.6%
Last authors 30.8%

The proportion of women as 1st authors is higher (44.8%-40.3%) in fields of Genetics, Cell and Molecular Biology and Molecular Medicine when compared to last authors (31.8%-24.7%) (Thelwall & Nevil 2019)

(*) 30 authors from China/Japan are still under investigation

Objective

- ✓ Track papers about MenSCs on Twitter
- ✓ Understand the social interest in MenSCs

Hypothesis

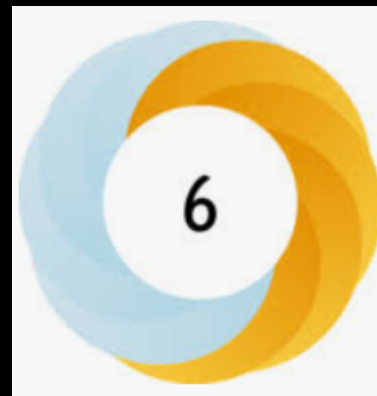
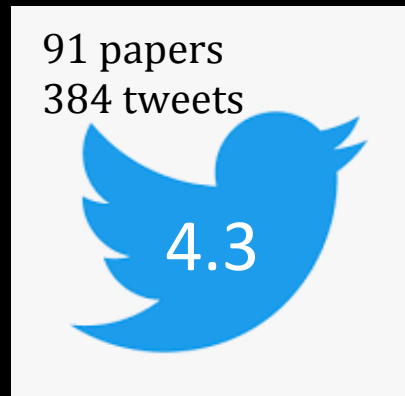
- ✓ Despite proven scientific high quality of MenSCs social interest and attention primarily belongs to women
- ✓ Dialogue on Twitter is mainly negative or biased

Methods

- ✓ PubMed database 2008-2018
- ✓ Keywords related to stem cells and tissues of origin
- ✓ Tweets of papers with DOI/PMID Altmetric.com
- ✓ Manually collected 105 tweets from 16 papers

- ✓ 201 papers MenSCs (0.2%)
- ✓ 150 sample after cleaning

Results - 150 papers



TL + RT = 65.7%

Comments
34.3%

Google Scholar
Citation GSC
40.3 Citations
per paper

US
Brazil
UK
France

Title + Link + RT

TL = 46.7%
RT = 16.2%
Others = 2.9%

65.7%



Mesenchymal Cell News
@MesenchymalCell

Human Endometrial MSCs Restore Ovarian Function @ZhejiangUniv <http://t.co/pQI0PGZ1TB>

22 May 2015



DaVinci Biosciences
@DaVinciBio

Human endometrial mesenchymal stem cells restore ovarian function through improving renewal of germline stem cells: <http://t.co/6d8dfhcbwK>

18 May 2015



NeuroStemCells
@NeuroStemCell

Stem Cell Therapy for Abrogating Stroke-Induced Neuroinflammation and Relevant Secondary Cell Death Mechanisms. <https://t.co/L9HyDhbNet> <https://t.co/emFin9BpAF>

27 Jul 2017



Mrs geeta sheoran
@MrsGeetasheoran

Endometrial regenerative cells: A novel stem cell population <https://t.co/GyBwZH3Cgj>

19 Aug 2017



Björkström lab
@bjorkstrom_lab

RT @IF91: A throwback to an excellent study by Martin Ivarsson et al. @bjorkstrom_lab on using menstrual blood as a viable source of uterin...

01 Oct 2018



AIRR-seq papers
@iRecRepPapers

#Mucosalimmunol Composition and dynamics of the uterine NK cell KIR repertoire in menstrual blood. <https://t.co/SMSGinSeMA>

08 Nov 2017

35 Comments

34.3%
12 papers

Women 48.6% (17)
Group 14.3% (5)

Men 25.7% (9)
Other 11.4% (4)



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Human menstrual blood: a renewable and sustainable source of stem cells for regenerative medicine

Overview of attention for article published in Stem Cell Research & Therapy, November 2018



16

About this Attention Score

In the top 25% of all research outputs scored by Altmetric

MORE...

Mentioned by

- 15 tweeters
- 1 Google+ user
- 1 Redditor

Citations

- 6 Dimensions

Readers on

- 26 Mendeley

SUMMARY

Twitter

Google+

Reddit

Dimensions citations

So far, Altmetric has seen 16 tweets from 15 users, with an upper bound of 35,578 followers.



HD Remaster

@FailedHd

omfg those feminists were on to something when they started calling their period "war paint" just ... the wrong direction

28 Oct 2020



Jo

@junker_jo

@FailedHd <https://t.co/hXgcCB0e6g>

28 Oct 2020



Line Lieblein Røsæg

@lineliros

Stem Cells from menstrual blood FTW <https://t.co/zgsGMysowg> but how on earth would you scale it up?

12 Oct 2020



Ytasha Womack ...Cheerleading for Utopia

@ytashawomack

When new science aligns with "old world" practices...

16 Jan 2020

This page shows the **most recent tweets** that mention this research output.
Click here to find out how to access more activity, including **12 additional tweets**.

Positive Comments

55.5%
20 Tweets



Athersys News

@Athersyss

MSCs have a track record of safety/efficacy & are an attractive cell type to treat stroke in vitro & in vivo <https://t.co/ulc4BBil1A> \$ATHX

27 Jul 2017



Yolanda Whyte, MD

@YolandaWhyteMD

Human menstrual blood contains potent stem cells that have the potential to differentiate into different tissues <http://t.co/tbhqKkZTn5>

22 Aug 2015



Dr Iva Filipovic

@IF91

A throwback to an excellent study by Martin Ivarsson et al. [@bjorkstrom_lab](https://t.co/bjorkstrom_lab) on using menstrual blood as a viable source of uterine NK cells. It is essential to find appropriate alternatives when working with hard-to-obtain tissue. <https://t.co/Ga5738ldjj> h

30 Sep 2018



Ghoat

@saltphoenix

ALWAYS KNEW IT BUT THE HOUR OF POWER IS UPON US, LADIES!!! Multipotent menstrual blood stromal stem cells: <http://t.co/hxZph0fi1H>

07 Jan 2015



Mensrights reddits

@mensrightsrdt

[@SolarisRex](https://t.co/SolarisRex) [@gregstevens](https://t.co/gregstevens) use means of research that are legal and ethical. Menstrual blood yields stem cells: <http://t.co/tXtjRokVHC>

16 Jul 2015

Neutral Comments

33.3%
12 Tweets



Cell Therapy News

@celltherapynews

#oa: hEnSCs Restore Ovarian Function through Improving the Renewal of Germline Stem Cells in a Mouse Model of POF <http://t.co/RJa4udpg0S>

21 May 2015



PurplePrincess ❤️ iVotedEarly 🇺🇸

@leelu5the

@manwhohasitall Um try menstrual fluid instead. (Or not.) <https://t.co/snNTPU2Zoj>
<https://t.co/BPwn6cHjFF> <https://t.co/CbnpHm27Sg>

23 Feb 2020



Mario Salinas

@morrislinus

RT @thomasichim: the original discovery of the endometrial regenerative cell (in my mind the BEST stem cell) <http://t.co/HeK8phG>

17 Jul 2011



Line Lieblein Røsæg

@lineliros

Stem Cells from menstrual blood FTW <https://t.co/zgsGMYsowg> but how on earth would you scale it up?

12 Oct 2020



Pablo Laverde

@ceyra616

Señorita no bote su sangre!! "Plasticity of human menstrual blood stem cells derived from the endometrium" <http://t.co/daXjvACspn>

10 Sep 2014



Jennifer Block @writingblock · Oct 20, 2019

Whoa, look at what turns out to be in this heretofore unimportant "waste" product: "Scientists in Japan have discovered that cells taken from **menstrual blood** can be cultivated in the lab and used like **stem cells** to repair damaged heart tissue." #science



Menstrual Blood Shows Heart Repairing Stem Cell Properties
Scientists in Japan have discovered that cells taken from menstrual blood can be cultivated in the lab and used like stem cells to repair...
[medicalnewstoday.com](https://www.medicalnewstoday.com)

2

3

17



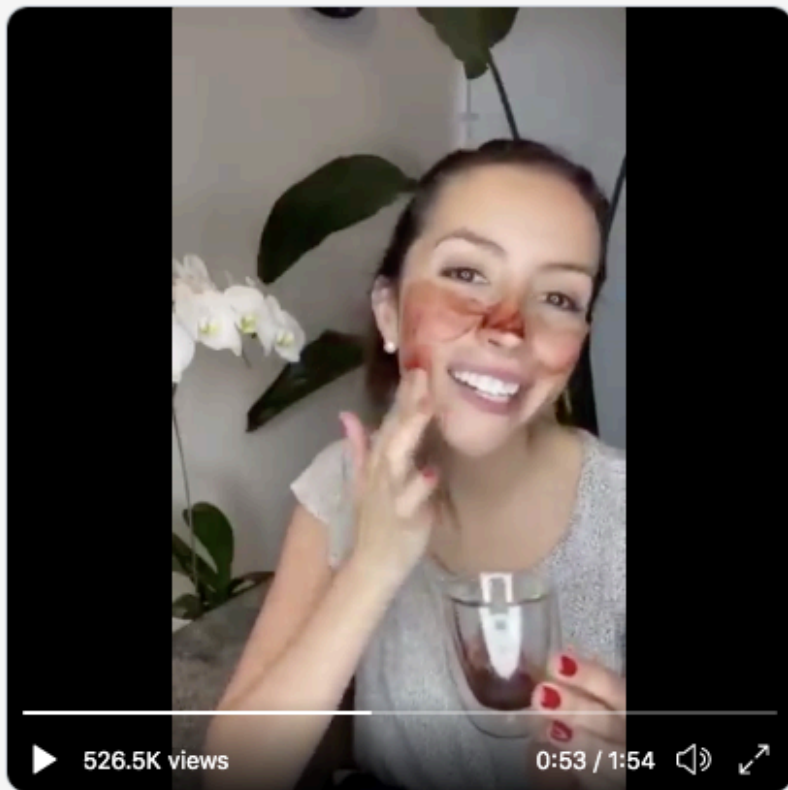
217.7k
followers

Negative Comments

8.6%
3 Tweets



Alejandro Macias @doctormacias · Jan 16
Así hacen la mascarilla de menstruación (el contenido es sensible).
No es que cause daño, pero no por eso hay que asumir que tiene
beneficios: carece de plausibilidad biológica alguna.



▶ 526.5K views

0:53 / 1:54

From MiAlma

170

405

604



Mr. Potato Knight
@Rafa_Kirigaya

@camilavega_ Células aisladas sin ningún tipo de "protección" y poco maduras. Compara todo ese proceso, con sacarla de ahí abajo sin más y ponerla, con todo lo que no son células, y en la piel, cuyas células están cubiertas de queratina. Sin hablar de l

17 Jan 2020



b_catenin
@b_catenin

"Multipotent menstrual blood stromal stem cells:
isolation, characterization and differentiation"
EEEEEEEEEEKS!!!!

11:47 AM · Jun 16, 2008 · Twitter Web Client



Conclusions

- ✓ Twitter is mainly used to disseminate information
- ✓ MenSCs received more scholar attention (GSC) than social attention (AAS)
- ✓ Women are more engaged: 30.5% of tweets and 48.6% of comments
- ✓ Men provided neutral or negative comments
- ✓ Groups provided only positive comment
- ✓ Scholars working with MenSCs should plan science communication efforts to get +visibility, interest and relevance
- ✓ Involving women scientists, feminists and influencers in scicomm efforts can be a good start

Thank you!
Obrigada!

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Acknowledgements

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References

Haustein, S. (2018). Twitter at scholarly communication. *Altmetric blog*, 12 June 2018. <https://www.altmetric.com/blog/twitter-in-scholarly-communication/>

Kolahi, J., Khazaei, S., Iranmanesh, P. *et al.* (2019). Analysis of highly tweeted dental journals and articles: a science mapping approach. *Br Dent J* 226, 673–678. <https://doi.org/10.1038/s41415-019-0212-z>

Manica, Daniela. (2019). Symptosis with CeSaM: making with menstrual blood stem cells in a Brazilian Biophysics laboratory. In: 4S Annual Meeting 2019.

Manica, Daniela; Goldenberg, Regina & Asensi, Karina. (2018). CeSaM, as células do sangue menstrual: gênero, tecnociência e terapia celular. *Interseções: Revista de Estudos Interdisciplinares*, UERJ. v. 20. p. 93-113. doi: 10.12957/irei.2018.35862

Noorden, R. Van. (2014) Online collaboration: Scientists and the social network. *Nature*, 512 (7513):126-129.

Rodrigues, Deivid de Carvalho; Asensi, Karina Dutra; Vairo, Leandro; Azevedo-Pereira, Ricardo Luiz; Silva, Rosane; Rondinelli, Edson; Goldenberg, Regina Coeli; Campos de Carvalho, Antonio Carlos; Ürményi, Turán Péter. (2012). Human Menstrual Blood-Derived Mesenchymal Cells as a Cell Source of Rapid and Efficient Nuclear Reprogramming. *Cell Transplantation*, v. 21, p. 2215–2224.

Robillard, J.M., Cabral, E., Hennessey, C. *et al.* (2015). Fueling Hope: Stem Cells in Social Media. *Stem Cell Rev and Rep* 11, 540–546. <https://doi.org/10.1007/s12015-015-9591-y>

Statista. (2019) Number of monthly active Twitter users worldwide from 1st quarter 2010 to 1st quarter 2019. <https://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/> (acesso em 29/07/2019)

Thelwall, M., Nevill, T. (2019). No evidence of citation bias as a determinant of STEM gender disparities in US biochemistry, genetics and molecular biology research. *Scientometrics* 121, 1793–1801. <https://doi.org/10.1007/s11192-019-03271-0>

Infographic by:

Lee Young-Ho. (2018). Storage and use of cord blood. *J. Korean Medical Assoc*, 61(9): 557-565.