

The iPS Spinning in Top Journals

Shi V. Liu

Eagle Institute of Molecular Medicine
Apex, NC 27502 USA
SVL@logibio.com

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HIGHLIGHT

No biological research has captured so much and so intense attention from the “top” journals. The heavy spinning on iPS cells has created a global hype on “therapeutic” cloning and regenerative “medicine”.

ABSTRACT

Science should progress on solid testing of the hypotheses and independent validation of the claims. However, nowadays many anticipated “discoveries” are “confirmed” by heavy spinning and massive broadcasting. The “generation” of so-called “induced” pluripotent stem (iPS) cells actually has never been proven beyond reasonable doubt. However, “top” journals still spun heavily on this unproven claim while totally suppressing objective criticisms (<http://im1.biz/Cloning.htm>). Some of the “experts’ Commentaries are outright misrepresentations. Unfortunately, these untruthful abstractions made into headlines of mass media that led to the hypes of “turning clock back” and “turning lead into gold”. However, history will quickly show that the so-called “first biological airplane” will never fly over the therapeutic cloning “sky” and a Nobel-Prize-“winning” discovery is a great detour in stem cell research.

KEY WORDS

Stem cell, ES, iPS, Cloning, Induction, Reprogramming, Regeneration, Hype, Spinning, Misrepresentation

Since the publication of the first iPS research paper in 2006 [2], at least 18 research papers on iPS cells have been published so far (by February 25, 2008) (see <http://im1.biz/FastTrack.htm> for a list of updated information). Meanwhile, many commentaries were also published. To give a quick view on how heavy the spinning on the iPS cells is a list of Commentaries published in some “top” journals was compiled here (table 1).

I should say that this list is in no way a complete one. But it at least demonstrates how some shaky claims made in the various iPS reports were “firmed” up over the publication and media spinning process.

History will show us that, once a mistake is equipped with some media-spinning wins, it can really fly high enough to gain ‘respect’ from everyone who cannot see the details or even does not wish to see the details.

But once the wins are broken the destruction to the “airplane” will be catastrophic as it’s falling down will not avoid the acceleration speed.

Then, what those “experts” will say again? How could those “top” journals justify their defiance against earlier criticisms and their heavy spinning on those flawed and even fraud papers?

Table 1. A chronological list of Commentaries published on iPS publications in “top” journals

Seq. No.	Ref.	Publication	Comment on	Major points and views
1	Rodolfa et al 2006 [1]	<i>Cell</i> 126: 652, 2006	Takahashi 2006 [2]	Overexpression of embryonic transcription factors restores pluripotency to adult somatic cells.
2	Anonymous 2007 [3]	<i>Nature</i> 447: 618, 2007	Okita et al 2007 [4] Wernig et al 2007 [5] Maherali et al 2007 [6]	Simple switch turns cells embryonic: Normal skin cells can be reprogrammed to an embryonic state in mice....cells that seem indistinguishable from embryonic stem cells.
3	Rossant 2007 [7]	<i>Nature</i> 448: 260, 2007	Okita et al 2007 [4] Wernig et al 2007 [5] Maherali et al 2007 [6]	Researchers have engineered embryonic stem-like cells from normal mouse skin cells ... without the use of donated eggs or embryos.
4	Holden 2007 [8]	<i>Science</i> 316:1404, 2007	Okita et al 2007 [4] Wernig et al 2007 [5] Maherali et al 2007 [6]	Teams reprogram differentiated cells – without eggs
5	Yamanaka 2007 [9]	<i>Cell Stem Cell</i>	Takahashi 2006 [2]	Strategies and new developments in the generation of patient-specific pluripotent stem cells. How do the four factors induce pluripotent stem cells? C-Myc and KLF4 are required for the transformation but alone would generate tumor cells. Oct-3/4 and Sox 2 direct the cell fate away from tumor cells towards ES-like cells.
6	Rodolfa et al 2007 [10]	<i>Differentiation</i> 75: 572, 2007	Takahashi 2006 [2] Okita et al 2007 [4] Wernig et al 2007 [5] Maherali et al 2007 [6]	Summary of 4 iPS publications and overview of the general experimental design for reprogramming the differentiated state by viral transduction. Epigenetic analysis showed the iPS cells are virtually indistinguishable from ES cells.
7	Zaehres et al 2007 [11]	<i>Cell</i> 131: 834, 2007	Takahashi et al 2007 [12]	Induction of pluripotency: From mouse to human. Human pluripotent stem cells resemble human embryonic stem cells by all measured criteria. Direct reprogramming of somatic cells to a pluripotent state, thus reversing the developmental arrow of time. A significant turning point in nuclear reprogramming research with broad implications for generating patient-specific stem cells.
8	Qi and Pei [13]	<i>Cell Res.</i> 17: 578, 2007	Takahashi 2006 [2]	The initial eastern amazement and excitement for the “Magic 4”
9	Yamanaka 2008 [14]	<i>Cell Prolif.</i> 41: 51, 2008	Takahashi 2006 [2]	Generating pluripotent stem cells directly from a patient’s somatic cells. The low

				efficiency is explained as a requirement of specific amounts and patterns of expression of the four factors and the balance between c-Myc and KLF4 might be a critical for transformation in iPS cells. The forced expression of c-Myc and KLF4 alone would result in generation of tumour cells, but not pluripotent stem cells. It is probably Oct-3/4 and Sox2 that would direct cell fate from tumor cells to embryonic stem-like cells.
10	Kennedy 2007 [15]	<i>Science</i> 318: 1833	Yu et al 2007 [16] Hanna et al 2007 [17]	A strong Breakthrough runner-up arrived at this year's finishing line... adult human epithelial cells could be reprogrammed ...to act as embryonic stem cells do, to produce every descendent cell type. A major step toward ending the "ethical" controversy.
11	Anonymous 2007 [18]	<i>Science</i> 318: 1844, 2007	All iPS papers	Runners-up of the Break through of the Year: Reprogramming cells. Both a scientific and a political breakthrough. iPS cells that looked and acted like ES cells.
12	Anonymous 2007	<i>Nature</i> 450: 1130, 2007	Nakagawa et al 2007 [19] Yu et al 2007 [16]	<i>Nature's</i> favorite papers published elsewhere
13	Pera 2008 [20]	<i>Nature</i> 451: 135, 2008	Most iPS papers especially Park et al 2007 [21]	Proves beyond doubt that direct reprogramming is an efficient way of generating human pluripotent stem cells from adult cells.
14	Pera et al 2008 [22]	<i>Nature Biotechnol</i> 26: 59, 2008	Nakagawa et al 2007 [19]	Induced pluripotent stem cells have been generated from mouse and human adult fibroblasts without the tumor-causing gene <i>c-Myc</i> . It is still formally possible that the target cells represent a small minority population of primitive multipotent cells rather than fully differentiated cells.
15	Knopfler 2008 [23]	<i>Cell Stem Cell</i> 2:18, 2008	Most iPS papers	Myc is an unexpected ingredient in the stem cell cocktail. A combination model of iPS cell formation that start with selection of rare permissive cells, followed with chromatin reprogramming and reversal of differentiation.
16	Pei 2008 [24]	<i>Cell Res.</i> 18: 221,2008	Most iPS papers	The continued eastern chase for the western iPS bandwagon
17	Gurdon [25]	<i>Cell Stem Cell</i> 2: 135, 2008	Yamanaka's papers	Yamanaka and colleagues have recently achieved remarkable success in deriving ES cells directly from adult fibroblasts
18	Gottweis and Minger [26]	<i>Nature Biotechnol.</i> 26: 271, 2008	Most iPS papers	iPS technology meets the "ethical" and political demands

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(Please visit http://im1.biz/iPS_spin.htm for update on this table)