Scientific Article Types

		
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Sections:	News News Features Correspondence Perspectives Articles Letters Jobs	News of the Week News Focus Letters Views Research Articles Reports Careers

Table 1. Content and Impact Factors for the twenty biomedical journals with highest Impact Factors, 2010, listed in order of highest Content Factor.

Journal	Content Factor	Impact Factor
1. NATURE	511.2	36.1
2. SCIENCE	469.8	31.4
3. NEW ENGL J MED	227.7	53.5
4. CELL	167.6	32.4
5. LANCET	155.7	33.6
6. JAMA-J AM MED ASSOC	117.5	30.0
7. CHEM REV	88.4	33.0
8. NAT GENET	76.3	36.4
9. NAT BIOTECHNOL	34.5	31.1
10. NAT MATER	32.0	29.9
11. REV MOD PHYS	29.9	51.7
12. NAT REV MOL CELL BIO	26.8	38.7
13. NAT REV CANCER	26.7	37.2
14. NAT REV IMMUNOL	21.1	35.2
15. ANNU REV BIOCHEM	18.6	29.7
16. NAT REV GENET	18.5	32.7
17. ANNU REV IMMUNOL	16.1	49.3
18. ACTA CRYSTALLOGR A	13.9	54.3
19. NAT NANOTECHNOL	11.4	30.3
20. CA-CANCER J CLIN	9.8	94.3

The Impact Factor is calculated by dividing the number of current year citations to source items published in the given journal during the previous two years by the total number of source items; the Content Factor is the total number of citations in a given year to all of the papers the journal had published up to and including the year in question, reported in "kilo-cites" (ie thousands of citations).

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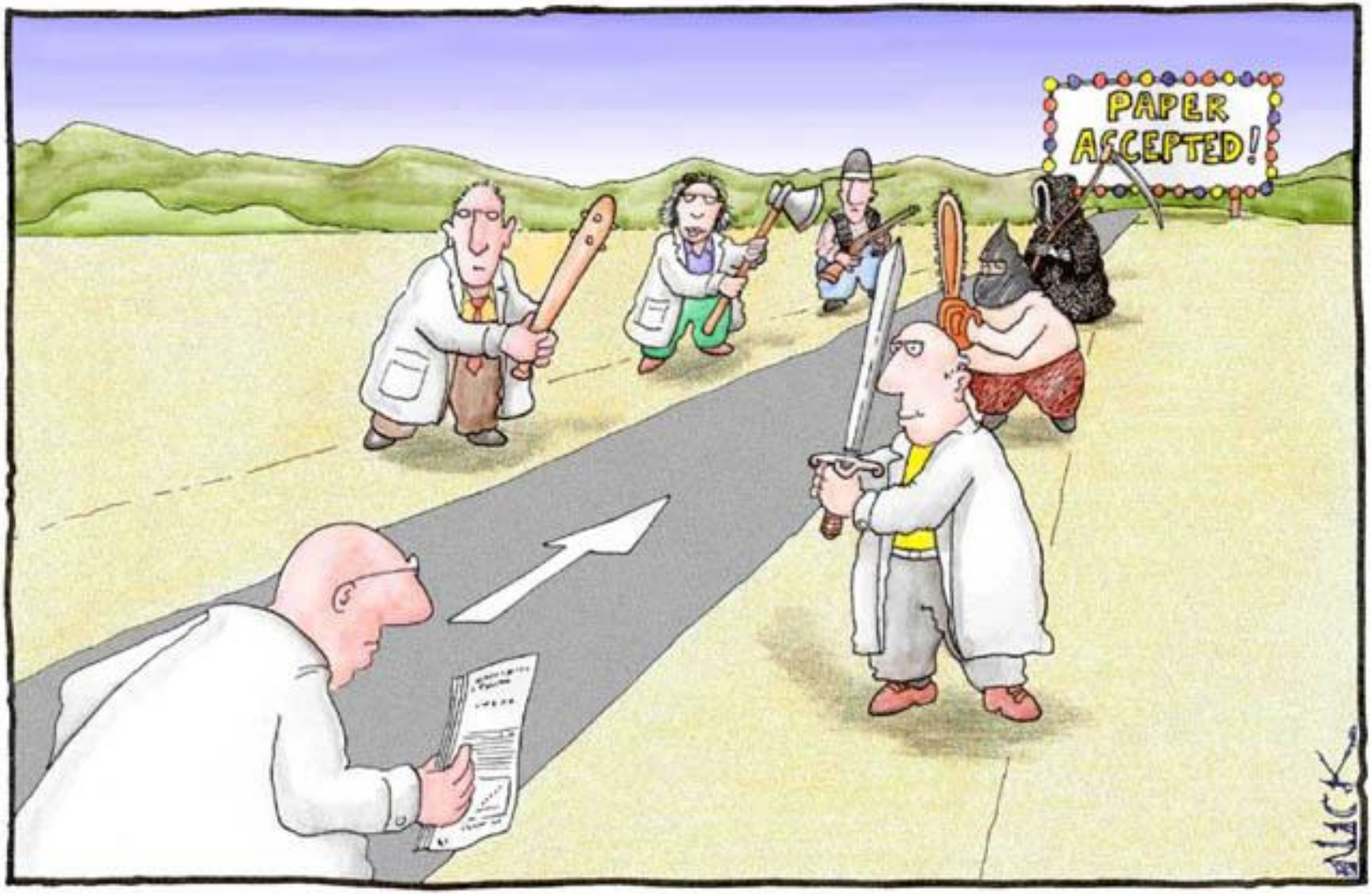
Table 2. Content and Impact Factors for the twenty orthopaedic surgery journals with highest Impact Factors, 2010, listed in order of highest Content Factor.

Journal	Content Factor	Impact Factor
1. SPINE	33.12	2.51
2. CLIN ORTHOP RELAT R	28.68	2.12
3. J BONE JOINT SURG AM	23.56	2.97
4. AM J SPORT MED	15.49	3.82
5. J BONE JOINT SURG BR	14.76	2.35
6. J ORTHOP RES	10.69	2.98
7. ARTHROSCOPY	8.59	3.32
8. OSTEOARTHR CARTILAGE	7.14	3.95
9. J ARTHROPLASTY	6.67	2.21
10. INJURY	6.30	2.27
11. PHYS THER	6.25	2.65
12. EUR SPINE J	5.18	1.99
13. CLIN BIOMECH	4.85	2.04
14. J SHOULDER ELB SURG	4.68	2.31
15. GAIT POSTURE	4.44	2.31
16. J ORTHOP SPORT PHYS	2.94	2.54
17. SPINE J	2.71	3.02
18. J AM ACAD ORTHOP SUR	2.26	2.55
19. CLIN J SPORT MED	2.21	2.11
20. CONNECT TISSUE RES	1.79	2.09

Content Factor is the total number of citations in a given year to all of the papers the journal had published up to and including the year in question, reported in "kilo-cites" (ie, thousands of citations). For example, the 2010 Content Factor for the journal *Clinical Orthopaedics and Related Research* was 28.68, meaning that in 2010 there were approximately 28,680 (28,676 to be precise) citations in the medical literature to papers that had (ever) been published in Clinical Orthopaedics and Related Research.

doi:10.1371/journal.pone.0041554.t002



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

Substrate Elasticity Regulates Skeletal Muscle Stem Cell Self-Renewal in Culture

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Erişkin dokuda bulunan kök hücreler (ör. kas kök hücresi) vücut içerisinde rejenere olma özelliği göstermesine rağmen hücre kültüründe bu özelliğini hızla kaybetmektedir.

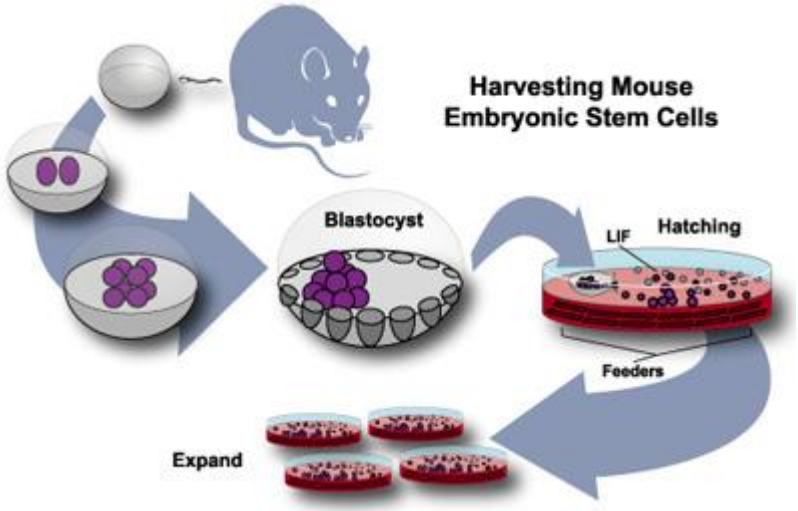
Biyofiziksel ve biyokimyasal olarak niş özelliklerini taklit eden bir substrat ile, elastisitenin kültürdeki kök hücrelerin davranışını regüle eden bir parametre olduğu gösterilmiştir.

Sert plastik yüzeyler üzerindeki (~10^6 kPa) kas kök hücrelerinin aksine, kas elastisitesini taklit eden yumuşak hidrojel substratlar üzerinde (12 kPa) kas kök hücreleri kendilerini yenileme ve çoğalma özellikleri göstermiş; fareye transplante edildiklerinde kas rejenerasyonuna büyük ölçüde katılmışlardır.

Bu çalışma, fizyolojik doku rijiditesi sağlanarak yetişkin kök hücrelerin hücre kültürü ortamında çoğaltılmasının mümkün olduğunu gösteren yeni bir kanıt sunmaktadır.

Bu buluş kas hasarlarının tedavisi için hücre temelli çözümlerin gelişmesini sağlayacaktır.

Standard Cell Culture



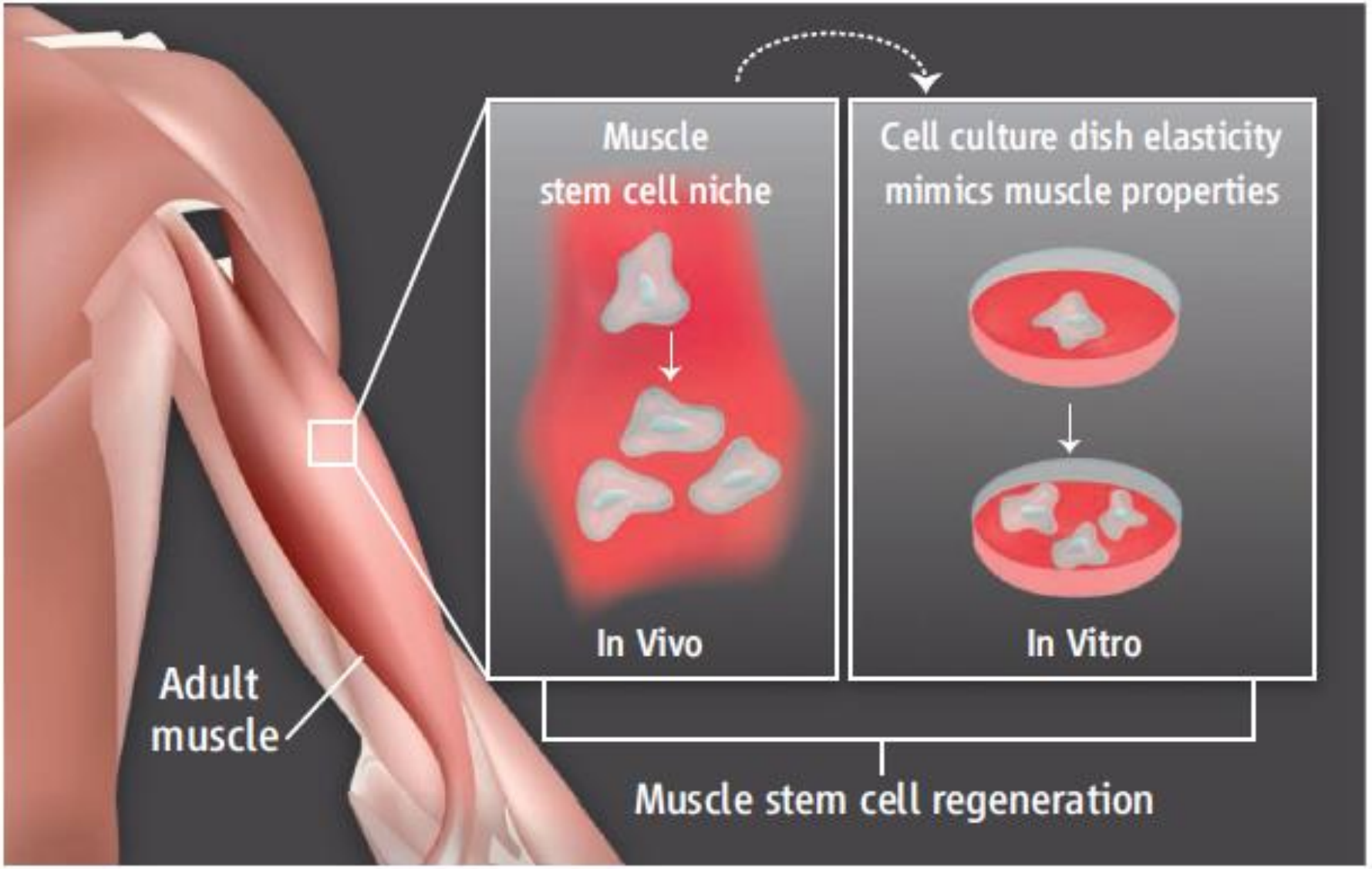

Muscle
stem cell niche
Cell culture dish elasticity
mimics muscle properties
In Vivo
In Vitro
Adult
muscle
Muscle stem cell regeneration

Fig. 1. Pliant hydrogel promotes MuSC survival and prevents differentiation in culture.
(A) PEG hydrogels with tunable mechanical properties. Young's modulus is linearly correlated with precursor polymer concentration
(B) Image of a pliant PEG hydrogel. Confocal immunofluorescence image of hydrogel microcontact printed with laminin.
(C) Dissected tibialis anterior muscles were analyzed by rheometry (horizontal line indicates the mean).
(D) Gel surface protein density did not differ significantly on PEG hydrogels of different rigidities
(E) Scheme of Baxter algorithm analysis of time-lapse videos.

Yumuşak ve sert yüzeylerde hücre canlılık analizi

Fig 1. (F) Single MuSC (black data points) velocity on pliant or rigid culture substrates. Circles denote mean velocity T SD ($P < 0.0001$).
(G) Change in total MuSC number on soft (top plot) or stiff (bottom plot) substrates during time-lapse acquisition. Deaths (X) and divisions (O) are shown, and colors designate five cell generations (G1 to G5). The proportion of cells in each generation at all time points is shown. Cell number is normalized to a starting population of 100 single MuSCs.

Kök hücre özelliklerinin korunması

Dilusyon analizi

Fig. 2. Cultured MuSC engraftment is modulated by substrate elasticity.
(A) Scheme of in vivo transplantation experiments.
(B) Scatter graph of BLI values of recipient mice 1 month after transplantation after 7-day culture on substrates of varying stiffness. Representative bioluminescence images of mice transplanted with each culture condition.
(C) Percentage of mice from each experimental condition that had a BLI value above the engraftment threshold.
(D) Scatter graph of BLI values of recipient mice 1 month after transplantation with different numbers of Fluc MuSCs cultured for 7 days on either hydrogel (black) or plastic (red).
(E) Percentage of total transplanted mice in each experimental condition exhibiting a BLI value above the engraftment threshold.

GFP$^+$ myofiber

Fig. 3. Culture on pliant hydrogel promotes muscle stem cell engraftment and niche repopulation in vivo.

(A) Engraftment of freshly **isolated (black)** and **pliant (green)** or **rigid (red)** substrate-cultured MuSCs monitored by BLI for a period of 30 days

(B) Immunofluorescence of GFP expression in transverse sections of muscles 1 month after transplantation with freshly isolated or 1 week pliant hydrogel-cultured MuSCs

(C) B-gal stainig reveal that like freshly isolated cells, transplanted hydrogel cultured cells are found in the satellite cell niche, beneath the basal lamina and atop myofibers.

Fig. 4. Culture on pliant hydrogel promotes muscle stem cell self-renewal.

A) Scheme of in vivo selfrenewal assay.

B) Percentage of total doublets exhibiting a Pax7+/+ gene signature in pliant or stiff microwells (right). Representative image of a Pax7+/+ doublet (left).

C) Scatter graph (left) of bioluminescent values from mice transplanted with doublets derived from pliant or stiff microwells or clones collected from pliant microwells. Images of mice with bioluminescent values above threshold are shown.

D) Immunohistochemistry of GFP expression in transverse sections of muscles 1 month after transplantation with five MuSC doublets (top) or a single clone (bottom) cultured on pliant hydrogel.

Teşekkürler..