

Social Media

Reach Out - Connect - Learn

Build Your Own Reputation

Ralf Reski

Plant Biotechnology, University of Freiburg

Why Science Communication (Outreach)?

- Tax payers work hard to fund Universities – we have a social responsibility.
- Political discourse determines frame of our work – we should take part in that discourse.
- Learn to describe your thoughts in a widely understandable way.
- Gather new information quickly.
- Build networks, learn and discuss.
- Make your science widely accessible.
- Monitor your feed-back (in form of citations).

Scientific Publications

- It is not enough to have results in your lab book or thesis.
- Writing manuscripts helps you to structure your research.
- Learn from anonymous reviewers (not all are evil).
- Spread your ideas in the scientific community.
- Publications are the basis of every scientific career.
- Citations of your publications provide a firm measure for the importance of your research (well, mostly).

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Article | Open Access | Published: 12 August 2021

Expression of a human cDNA in moss results in spliced mRNAs and fragmentary protein isoforms

Oguz Top, Stella W. L. Milferstaedt, Nico van Gessel, Sebastian N. W. Hoernstein, Bugra Özdemir, Eva L. Decker & Ralf Reski

Communications Biology 4, Article number: 964 (2021) | Cite this article

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Abstract

Production of biopharmaceuticals relies on the expression of mammalian cDNAs in host organisms. Here we show that the expression of a human cDNA in the moss *Physcomitrium patens* generates the expected full-length and four additional transcripts due to unexpected splicing. This mRNA splicing results in non-functional protein isoforms, cellular misallocation of the proteins and low product yields. We integrated these results together with the results of our analysis of all 32,926 protein-encoding *Physcomitrella* genes and their 87,533 annotated transcripts in a web application, physCO, for automatized optimization. A thus optimized cDNA results in about twelve times more protein, which correctly localizes to the ER. An analysis of codon preferences of different production hosts suggests that similar effects occur also in non-plant hosts. We anticipate that the use of our methodology will prevent so far undetected mRNA heterosplicing resulting in maximized functional protein amounts for basic biology and biotechnology.

Introduction

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- Not all publications are open access.
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Ralf Reski

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Distinguished Professor · Professor

Institution and department
University of Freiburg · Chair Plant Biotechnology

Skills
Plant Biotechnology · Botany · Plant Biology + 25 others

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About me

Introduction

Developed Physcomitrella to a flagship model organism for basic & applied science. First identification of a gene function in plants by gene targeting. First functional identification of an organelle-division protein. First genome sequence of a lower plant. First description of microRNA-mediated transcriptional gene silencing. First identification of a master regulator for asexual reproduction. First identification of a single gene trigger for embryogenesis. First identification of a basal genetic core set for stomata formation. First description of a pre-lignin pathway. Invention of the Moss Bioreactor for the production of biopharmaceuticals. Founder of Greenovation and founding PI of 3 Excellence Clusters.

Languages

English · German

Current affiliation

University of Freiburg

Location
Freiburg, Germany

Department
Chair Plant Biotechnology

Position
Professor

Add missing details about your affiliation
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Plant Biotechnology Freiburg

Lab head

Ralf Reski

Lab members (11)

Current journal roles

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Network

Google Scholar

- Automatically monitors the citations of your publications.
- Create your own profile to become visible.
- Provides a ranking of your publications.
- Calculates your h-value as a measure of the importance of your research.
- h-value $X = X$ articles cited at least X times.
- Good h-value = your age – 30.



Ralf Reski

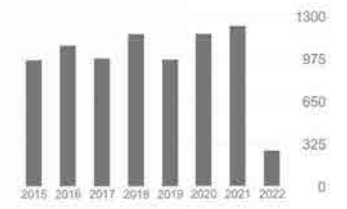
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Distinguished Professor (Ordinarius) Plant Biotechnology, Faculty of Biology,
 University of Freiburg
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Zitiert von ALLE ANZEIGEN

	Alle	Seit 2017
Zitate	16565	5785
h-index	71	39
i10-index	205	142

TITEL	ZITIERT VON	JAHR
<input type="checkbox"/> The Physcomitrella genome reveals evolutionary insights into the conquest of land by plants SA Rensing, D Lang, AD Zimmer, A Terry, A Salamov, H Shapiro, ... Science 319, 64-69	1801	2008
<input type="checkbox"/> Transcriptional control of gene expression by microRNAs B Khraiwesh, MA Arif, GI Seumel, S Ossowski, D Weigel, R Reski, ... Cell 140, 111-122	537	2010
<input type="checkbox"/> Plant nuclear gene knockout reveals a role in plastid division for the homolog of the bacterial cell division protein FtsZ, an ancestral tubulin R Strepp, S Scholz, S Kruse, V Speth, R Reski Proceedings of the National Academy of Sciences USA 95, 4368-4373	465	1998
<input type="checkbox"/> Identification of a novel Delta 6-acyl-group desaturase by targeted gene disruption in Physcomitrella patens T Girke, H Schmidt, U Zahringner, R Reski, E Heinz Plant Journal 15, 39-48	313	1998
<input type="checkbox"/> Development, genetics and molecular biology of mosses R Reski Botanica Acta 111, 1-15	311	1998
<input type="checkbox"/> Induction of budding on chloronemata and caulonemata of the moss, Physcomitrella patens, using isopentenyladenine R Reski, WO Abel Planta 165, 354-358	262	1985
<input type="checkbox"/> Targeted knockouts of Physcomitrella lacking plant-specific immunogenic N-glycans A Koprivova, C Stemmer, F Altmann, A Hoffmann, S Kopriva, G Garr, ... Plant Biotechnology Journal 2, 517-523	239	2004
<input type="checkbox"/> The Physcomitrella patens chromosome-scale assembly reveals moss genome structure and evolution D Lang, KK Ulrich, F Murat, J Fuchs, J Jenkins, FB Haas, M Piednoel, ... Plant Journal 93, 515-533	218	2018
<input type="checkbox"/> Physcomitrella patens is highly tolerant against drought, salt and osmotic stress W Frank, D Ralnadewi, R Reski Planta 220, 384-394	198	2005
<input type="checkbox"/> An ancient genome duplication contributed to the abundance of metabolic genes in the moss Physcomitrella patens S Rensing, J Irk, J Fawcett, D Lang, A Zimmer, Y Van de Peer, R Reski BMC Evolutionary Biology 7, 130	197	2007
<input type="checkbox"/> Cloning and functional characterization of an enzyme involved in the cleavage of A6	103	1993



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Basierend auf Fördermandäten.

- Koautoren BEARBEITEN
- Eva Decker**
University of Freiburg, Plant Biot... >
 - Daniel Lang**
Plant Genome and Systems Biol... >
 - Stefan A Rensing**
Professor of Plant Cell Biology, ... >
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Twitter

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- 280 characters per tweet, but links and pictures possible.
- Very fast and direct – you read it on Twitter before it is in the news.
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Ralf Reski 
52.9K Tweets



Edit profile

Ralf Reski 
@ReskiLab

Professor Plant Biotech, a founder of 3 Excellence Clusters, 1 Company & NFDI DataPLANT, Moss, Physcomitrella, Sphagnum scholar.google.com/citations?hl=d...

Freiburg, Germany plant-biotech.net Born November 18, 1958
Joined October 2009

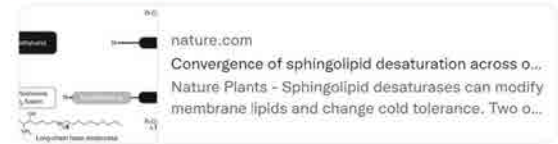
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Ralf Reski  @ReskiLab · Feb 1, 2021

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Ralf Reski  @ReskiLab · 14h

Excellent news. War crimes should not go unpunished.

Karim A. A. Khan QC  @KarimKhanQC · 14h

Statement of ICC Prosecutor, Karim A.A. Khan QC, on the Situation in Ukraine: "I have decided to proceed with opening an investigation." [icc-](#)

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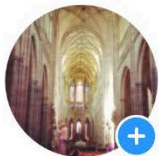
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Instagram

- Mainly for pictures.
- But texts and hashtags are possible and more and more often used.
- Basically as open as Twitter is – everyone can follow.
- I use it for private pictures and for science communications.

reskilab



1.261 Beiträge

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Ralf Reski

Person des öffentlichen Lebens

#Flowers #Cakes #Science #Physcomitrella #Sphagnum #moss #Plant #Biotechnology, a founder of 3 excellence clusters & 1 company.

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www.plant-biotech.net/

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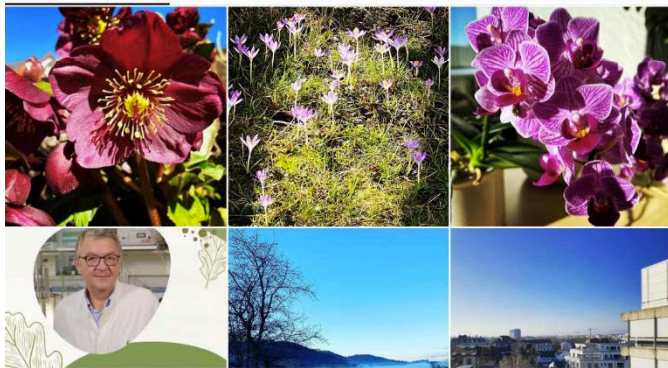
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RESKILAB Beiträge



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Insights ansehen

Beitrag bewerben



Gefällt oguztop und 16 weiteren Personen



Start Your Science Communication Today!

- It is easier than you might think.
- It can be fun.
- It is helpful.
- It is necessary.
- Help non-scientists to understand how scientists think and work.
- **Thank you for your attention. Do you have questions?**