Mahidol University
Institute of
Molecular Biosciences

How to write a good review article

Duncan R. Smith

Institute of Molecular Biosciences
Mahidol University

โครงการติดอาวุธให้นักวิจัยรุ่นใหม่ ผ่าน **Multi Mentoring System**
Mahidol University
15th December 2020

Who am I to advise on how to write a review?

230 papers published or in press

Since 2010 19 reviews published
1 in press

Editor, Journal of Virological Methods

Why write a review? – For me

To show grant activity:

1st report
Manuscript in preparation

2nd report
Manuscript submitted

3rd report
Publication

Particularly important for “slow” grants

To show academic mastery of a field

Why write a review? – the benefits for you:

1. "Free" output. No chemicals, consumables, staff costs.
2. "Extra" grant output
3. Can use for promotions (Assistant and Associate)
4. Can use for yearly evaluation
5. Can add to CV. Helps h-index
6. Can help to get grants
7. University reward!
8. Help Mahidol publications and citations

The only "cost" is: Time

Unless APC charges!

ประกาศมหาวิทยาลัยมหิดล

เรื่อง หลักเกณฑ์และอัตราการจ่ายเงินค่าตอบแทนผู้ตีพิมพ์บทความปริทัศน์ (Review Article) ในวารสารวิชาการระดับนานาชาติ

.....

โดยที่เป็นการสมควรกำหนดหลักเกณฑ์และอัตราการจ่ายเงินค่าตอบแทนการตีพิมพ์บทความทางวิชาการประเภทบทความปริทัศน์ (Review Article) ในวารสารวิชาการระดับนานาชาติ

อาศัยอำนาจตามข้อความในข้อ ๑๔.๓.๔ และข้อ ๑๕ ของประกาศมหาวิทยาลัยมหิดล เรื่อง หลักเกณฑ์ และวิธีการรับเงิน การเก็บรักษาเงิน การเบิกเงิน การจ่ายเงิน และการควบคุมดูแลการจ่ายเงิน พ.ศ.๒๕๕๑ และที่แก้ไขเพิ่มเติม ซึ่งออกตามความในข้อ ๓๘ ของข้อบังคับมหาวิทยาลัยมหิดล ว่าด้วยการบริหารงบประมาณ และการเงิน พ.ศ. ๒๕๕๓ และที่แก้ไขเพิ่มเติม อธิการบดีจึงกำหนดหลักเกณฑ์และอัตราการจ่ายเงินค่าตอบแทนไว้ดังนี้

๑. ในประกาศนี้

"ผู้ตีพิมพ์" หมายความว่า ผู้ปฏิบัติงานประจำที่มหาวิทยาลัยมหิดล และต้องเป็น first author หรือ corresponding author ของผลงาน

๒. บทความปริทัศน์ (Review Article) ที่อยู่ในเกณฑ์ได้รับเงินค่าตอบ

(๑) ต้องเป็นผลงานวิชาการที่ตีพิมพ์ในวารสารวิชาการระดับนานาชาติ และบทความปรากฏอยู่ในฐานข้อมูล Scopus

(๒) ผลงานตีพิมพ์มีชื่อส่วนงาน และมหาวิทยาลัยมหิดล ปรากฏอย่างชัดเจน และสามารถใช้คำสำคัญ "Mahidol University" ค้นหาบทความได้จากฐานข้อมูล Scopus

(๓) ผลงานตีพิมพ์ไม่เป็นผลงานจากวิทยานิพนธ์ สารนิพนธ์ หรือในระหว่างเป็นนักวิจัยหลังปริญญาเอกของผู้ตีพิมพ์

(๔) ผลงานตีพิมพ์เป็นผลงานจากวารสารวิชาการตั้งแต่เดือนพฤศจิกายน พ.ศ. ๒๕๖๑ (ค.ศ. ๒๐๑๘) เป็นต้นไป โดยยึดตามปีที่ปรากฏในบทความหรือฐานข้อมูล Scopus

๓. ให้จ่ายเงินค่าตอบแทนผู้ตีพิมพ์บทความปริทัศน์ (Review Article) ในวารสารวิชาการระดับนานาชาติ โดยพิจารณาค่า Quartile ของวารสารตามสาขาวิชา อ้างอิงตามฐานข้อมูล Scimago Journal & Country Rank ดังนี้

Journal Quartile	เงินค่าตอบแทน (บาท) / ฉบับ
วารสารที่อยู่ใน Q๑	ไม่เกิน ๔๐,๐๐๐
วารสารที่อยู่ใน Q๒	ไม่เกิน ๓๐,๐๐๐
วารสารที่อยู่ใน Q๓	ไม่เกิน ๒๐,๐๐๐

ทั้งนี้ ส่วนงานอาจพิจารณาการจ่ายเงินค่าตอบแทนผู้ตีพิมพ์บทความจากส่วนงานได้อีก

Q1 = 40,000 baht
Q2 = 30,000 baht
Q3 = 20,000 baht

Journal of Infection and Public Health 13 (2020) 11–15

Contents lists available at ScienceDirect

Journal of Infection and Public Health

journal homepage: http://www.elsevier.com/locate/jiph

Zika virus and microcephaly in Southeast Asia: A cause for concern?

Atichat Kuadkitkan, Nitwara Wikan, Wannapa Sornjai, Duncan R. Smith*

Institute of Molecular Biosciences, Mahidol University, Salaya 73170, Thailand

ARTICLE INFO

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Keywords:
Flavivirus
Zika virus
Birth defects
Southeast Asia

ABSTRACT

Zika virus (ZIKV), a mosquito transmitted virus in the family *Flaviviridae*, genus *Flavivirus*, recently emerged to cause infections in more than 70 countries and territories around the world. While human infection is normally asymptomatic, it can also result in a mild febrile disease similar to dengue fever. However, when a pregnant woman is infected, ZIKV can cause fetal abnormalities including microcephaly. Evidence has suggested that ZIKV has circulated in Southeast Asia for more than a decade and yet cases of ZIKV associated microcephaly remain sparsely documented. This review seeks to collate the information currently existing on ZIKV associated microcephaly in Southeast Asia, and assess the potential future risk posed by this virus.

Contents

What is a review?

An overview of a particular scientific or medical area

Best evidence reviews

Systematic reviews

Theory/model review

Issues review

(broadly more medically orientated)

Status quo reviews

Narrative reviews

Historical review

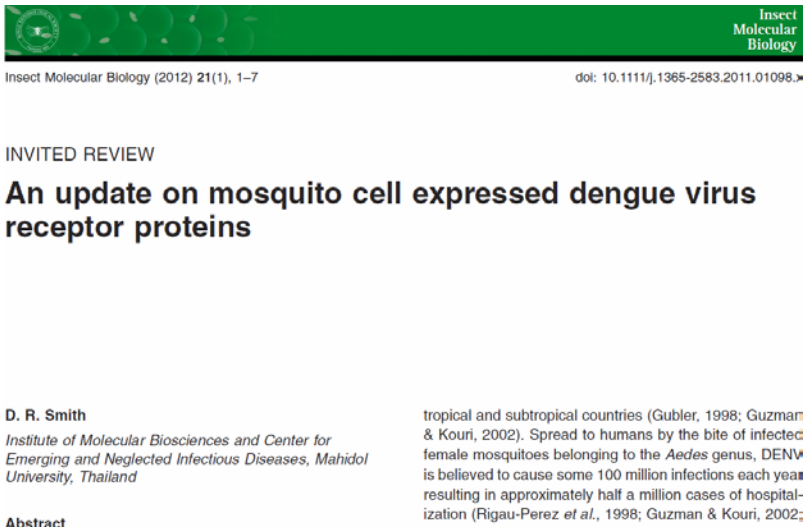
(more suitable)

Two main types of review

Comprehensive

Focused

e.g. “Dengue”
(epidemiology, immunology, virology, molecular biology)



Insect Molecular Biology

Insect Molecular Biology (2012) **21**(1), 1–7 doi: 10.1111/j.1365-2583.2011.01098.x

INVITED REVIEW

An update on mosquito cell expressed dengue virus receptor proteins

D. R. Smith
Institute of Molecular Biosciences and Center for Emerging and Neglected Infectious Diseases, Mahidol University, Thailand

Abstract

tropical and subtropical countries (Gubler, 1998; Guzman & Kouri, 2002). Spread to humans by the bite of infected female mosquitoes belonging to the *Aedes* genus, DENV is believed to cause some 100 million infections each year resulting in approximately half a million cases of hospitalization (Rigau-Perez *et al.*, 1998; Guzman & Kouri, 2002;

Note: not necessarily a “mini-review”

Word counts

Overlap

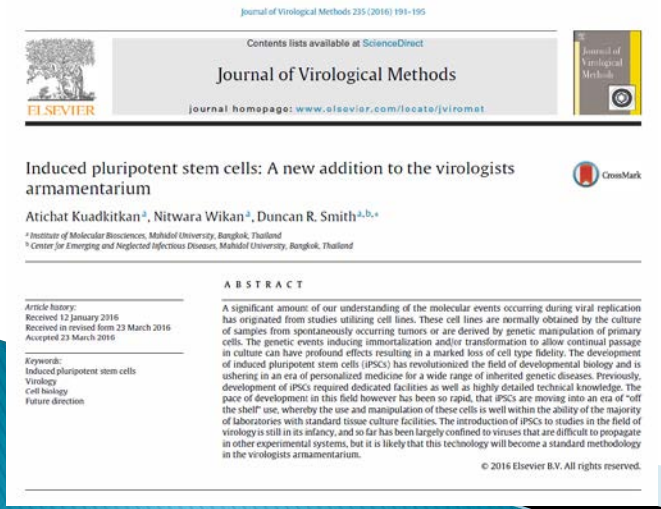
(mini) Review ⟷ (full) Review

Can be as few as 1,500 words

3,000 to 8,000 words

Virus/stem:1,600 words,
(8 double spaced pages,
not including references

CHIKV proteome: 4,600 words
(20 written double spaced pages,
not including references)



Journal of Virological Methods 235 (2016) 191–195

Contents lists available at ScienceDirect

Journal of Virological Methods

journal homepage: www.elsevier.com/locate/jviromet

Induced pluripotent stem cells: A new addition to the virologists armamentarium

Atichat Kuadkitkan[a], Nitwara Wikan[a], Duncan R. Smith[a,b,*]

[a] Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand
[b] Center for Emerging and Neglected Infectious Diseases, Mahidol University, Bangkok, Thailand

ABSTRACT

A significant amount of our understanding of the molecular events occurring during viral replication has originated from studies utilizing cell lines. These cell lines are normally obtained by the culture of samples from spontaneously occurring tumors or are derived by genetic manipulation of primary cells. The genetic events inducing immortalization and/or transformation to allow continual passage in culture can have profound effects resulting in a marked loss of cell type fidelity. The development of induced pluripotent stem cells (iPSCs) has revolutionized the field of developmental biology and is ushering in an era of personalized medicine for a wide range of inherited genetic diseases. Previously, development of iPSCs required dedicated facilities as well as highly detailed technical knowledge. The pace of development in this field however has been so rapid, that iPSCs are moving into an era of "off the shelf" use, whereby the use and manipulation of these cells is well within the ability of the majority of laboratories with standard tissue culture facilities. The introduction of iPSCs to studies in the field of virology is still in its infancy, and so far has been largely confined to viruses that are difficult to propagate in other experimental systems, but it is likely that this technology will become a standard methodology in the virologists armamentarium.

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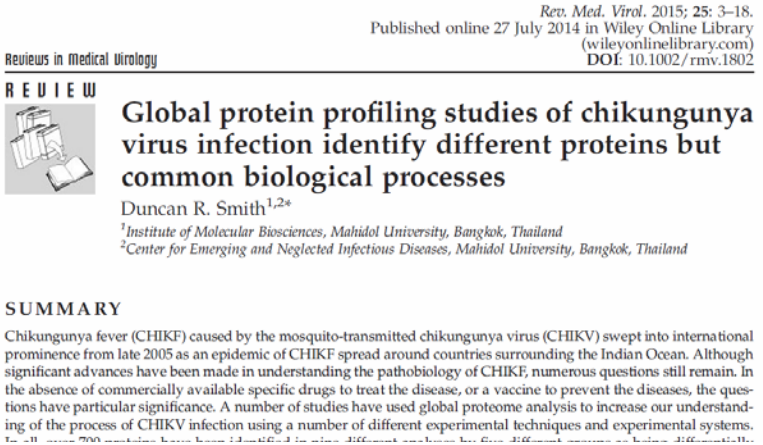


Rev. Med. Virol. 2015; 25: 3–18.
Published online 27 July 2014 in Wiley Online Library (wileyonlinelibrary.com)
DOI: 10.1002/rmv.1802

Reviews in Medical Virology

REVIEW

Global protein profiling studies of chikungunya virus infection identify different proteins but common biological processes

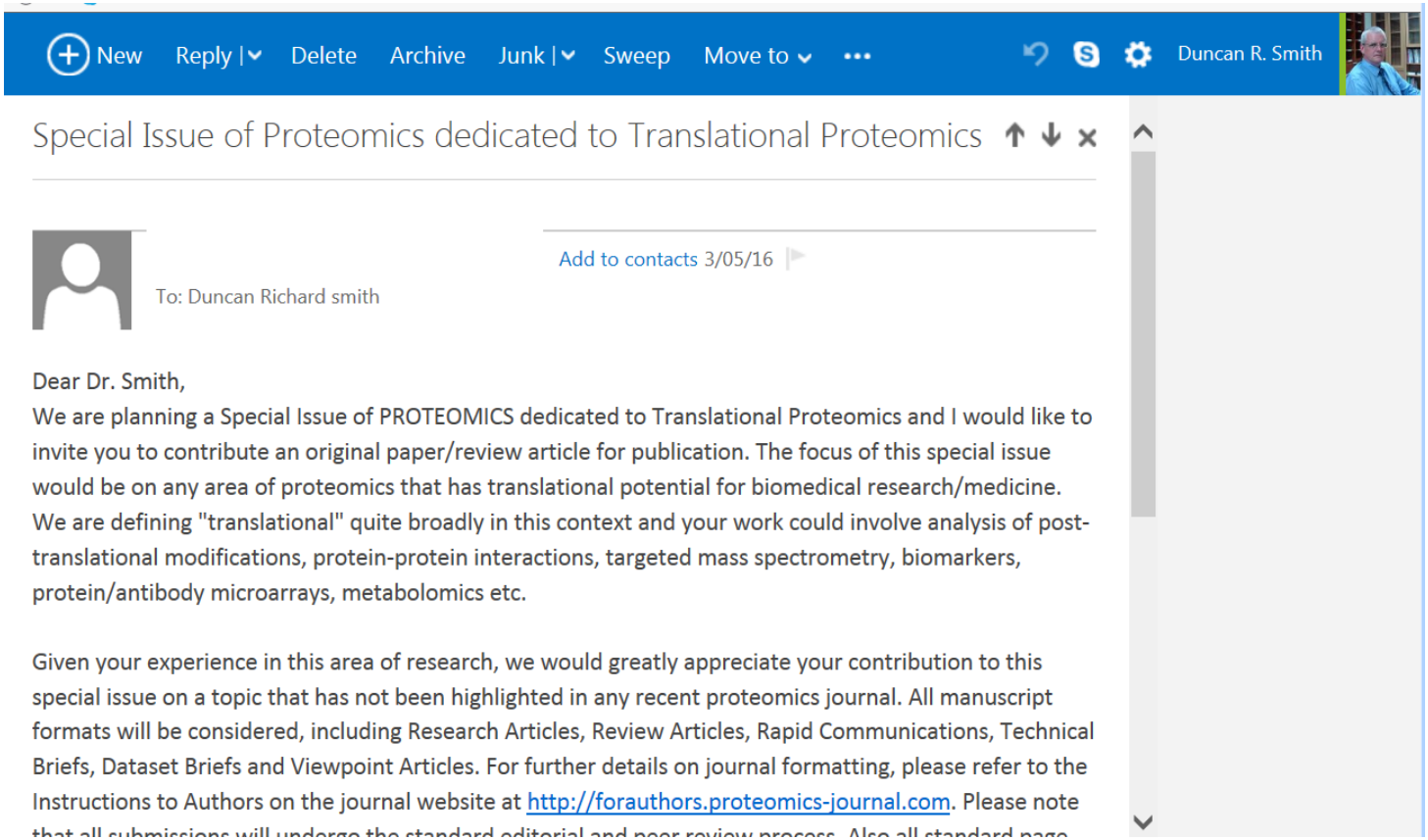
Duncan R. Smith[1,2]*

[1] Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand
[2] Center for Emerging and Neglected Infectious Diseases, Mahidol University, Bangkok, Thailand

SUMMARY

Chikungunya fever (CHIKF) caused by the mosquito-transmitted chikungunya virus (CHIKV) swept into international prominence from late 2005 as an epidemic of CHIKF spread around countries surrounding the Indian Ocean. Although significant advances have been made in understanding the pathobiology of CHIKF, numerous questions still remain. In the absence of commercially available specific drugs to treat the disease, or a vaccine to prevent the diseases, the questions have particular significance. A number of studies have used global proteome analysis to increase our understanding of the process of CHIKV infection using a number of different experimental techniques and experimental systems.

Do I need an invitation to write a review?



Note: Invite does not = accept!!

But be careful!!!!!

New | Reply | Delete | Archive | Junk | Sweep | Move to | ... | Duncan R. Smith

Reg: Reviews on Virology and Emerging Diseases: Submit manuscript

Journal of Virology and Emerging Diseases (jved@sciforschenonline.com) Add to contacts

To: duncan_r_smith@hotmail.com

Dear Dr. Nitwara Wikan,

Greetings!

Virology and Emerging Diseases

Invitation for Papers (Upcoming Issue February 2016)

CALL FOR PAPERS (Volume 2 Issue 2)

Virology and Emerging Diseases is a scholarly online, open access, peer-reviewed, interdisci
bimonthly, and fully refereed journal focusing on **all major areas of Virology and Emerging Diseas**
relevant fields. It is an international scientific journal that aims to contribute to the constant sc
research and training, so as to promote research in the field.

Tools

- Scholarlink Resource Centre Limited
- Scholarly and Academic Research Journals (SARJ)
- Scholarly Journals
- Scholarly Research Journal's
- Scholars Academic and Scientific Publishers (SAS Publishers)
- Scholars Research Library
- ScholarsHub.net
- Scholedge R&D Center
- Scholink
- Scholoxy Publications
- Sci-Afric Publishers
- Sci-Edit Publications
- Sci Forschen
- SciDoc Publishers
- Sciedu Press
- Science & Engineering Research Support soCiety (SERSC)
- Science & Knowledge Publishing Corporation Limited
- The Science and Information Organization (SAI)
- Science and Knowledge Research Society (SandK Research Society)
- Science Academy Publisher
- Science Alert
- Science and Education Centre of North America
- Science and Education Publishing (Scipub)
- Science and Engineering Publishing Company

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RECENT POSTS

- More Junk Science Proudly Published by Chinese Publisher SCIRP

Check the journal carefully!

Check in ISI database (Web of Science)

Check in SCOPUS database

Reviews. *Topics in Antiviral Medicine* welcomes original review articles on current issues related to infection with HIV or other viruses. *Topics in Antiviral Medicine* does not publish original research. Manuscripts should be 3000 to 6000 words (excluding references, tables, and figures) and should include numbered references and a brief introductory abstract of approximately 100 to 200 words. Original, adapted, or reprinted figures and tables may be included and should be cited in the text and accompanied by a brief title. Adapted and reprinted work requires proof of permission obtained from the original publishers and authors. Authors interested in submitting unsolicited manuscripts are encouraged to submit an outline or abstract of the proposed manuscript first; please contact the editor for further information.

Lancet Infectious Diseases

Green section (Reviews, Historical Reviews, Personal Views, Grand Rounds, Clinical Pictures, etc)

From July 1, 2015, papers submitted for the Green section of the journal will be eligible only for online publication, with the exception of Clinical Pictures (see *Lancet Inf Dis* 2015; **15**: 760)

Reviews

- Reviews may be commissioned or submitted unsolicited, although in the latter case it would be wise to send the Editor a one-page outline first (IDeditorial@lancet.com) to ensure that a review on the same subject has not already been commissioned. If you have already written the paper, please submit it for consideration via our online system

Look at the journal
"Instructions to authors"

REVIEW ARTICLES

Review articles are usually solicited by the editors, but we will consider unsolicited material. Please **send us a Presubmission Inquiry** before writing a review article for the *Journal*. All review articles undergo the same peer-review and editorial process as original research reports. They should be written for the general physician, not specialists. Consequently, they may include material that might be considered too introductory for specialists in the field being covered.

NEJM

I emailed them and asked if they would like to look at this review!

Insect Molecular Biology

Insect Molecular Biology (2012) **21**(1), 1–7 doi: 10.1111/j.1365-2583.2011.01098.x

INVITED REVIEW

An update on mosquito cell expressed dengue virus receptor proteins

D. R. Smith

Institute of Molecular Biosciences and Center for Emerging and Neglected Infectious Diseases, Mahidol University, Thailand

Abstract

tropical and subtropical countries (Gubler, 1998; Guzman & Kouri, 2002). Spread to humans by the bite of infected female mosquitoes belonging to the *Aedes* genus, DENV is believed to cause some 100 million infections each year resulting in approximately half a million cases of hospitalization (Rigau-Perez *et al.*, 1998; Guzman & Kouri, 2002;

Format for an outline pre-submission enquiry:

Zika virus: The history of a newly emerging arbovirus

Nitwara Wikan and Duncan R. Smith*

Institute of Molecular Biosciences, Mahidol University, Thailand

Abstract

Zika virus was originally identified in a sentinel rhesus monkey in Zika forest of Uganda in 1947. The virus is a member of the family Flaviviridae, genus Flavivirus and is transmitted to humans by Aedes species mosquitoes. The first report of Zika virus out of Africa and Asia was in 2007 when the virus was associated with a small outbreak in the Yap Islands. Since then, Zika virus infections have been reported around widely around the globe including in Southeast Asia, French Polynesia and the Pacific Islands, and parts of South America. Human infection normally results in a relatively mild and self limiting febrile disease, although recent reports have suggested a possible association with more serious sequelae such as Guillain-Barre syndrome as well as microcephaly in new born infants. This review summarizes the history of Zika virus from its first detection to the current worldwide distribution of this virus.

Introduction

Zika virus and virus transmission

Virus and genome, mosquito species as transmission agents, transmission cycles

Zika virus identification and early epidemiology

First isolation, seroprevalence studies in Africa and Asia

Zika virus epidemiology: the Yap Islands

Outbreak description, cross reaction with dengue, identification of Zika, viremia levels, USA scientists, sexual transmission (?)

Zika virus epidemiology: Southeast Asia

Cambodia (2010), Philippines (2011), Indonesia (travel associated, 2013), Thailand (2012 - 2014; Canadian, German travelers, identification in Thailand, Japanese tourist),

Zika virus epidemiology: French Polynesia and the Pacific Islands

French Polynesia (Oct 2013), Tahiti (tourist; Dec 2013), New Caledonia (Jan 2014, plus co-infection dengue/zika), Cook Islands, Easter Island

Zika virus epidemiology: South America

Camacari and Natal (March 2015) Introduction theories (World cup or Va'a World Sprint Championship), size of outbreak, update as of 21 January 2016

Ziak virus: A changing clinical presentation?

Early reports/later reports, Guillain-Barre syndrome and microcephaly *(not completed)*

Conclusions

(*not completed*)

If not completed,
estimate how long to finish

Important point:

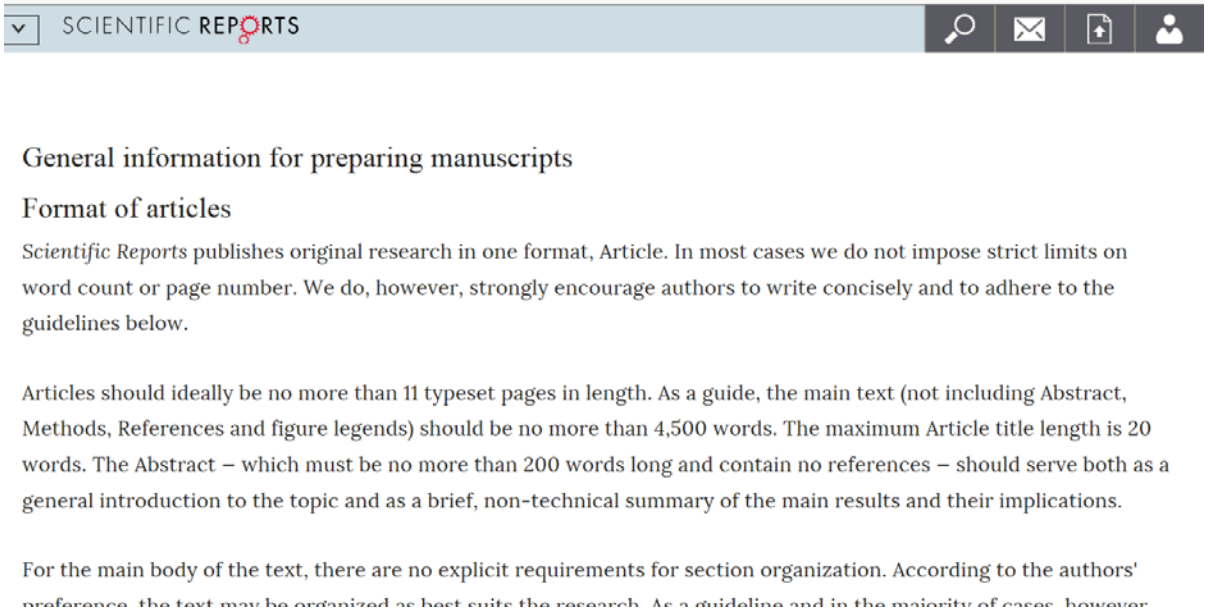
Journals LIKE reviews. Reviews are normally heavily cited, and this adds to the journal impact factor

Which journal should I write for??

As a rule (unless invited) I like to get the review complete or nearly complete, and then find a suitable journal and fine tune for that journal

Keep in a generic format at first

Note: Some journals do not publish reviews:



SCIENTIFIC REPORTS

General information for preparing manuscripts

Format of articles

Scientific Reports publishes original research in one format, Article. In most cases we do not impose strict limits on word count or page number. We do, however, strongly encourage authors to write concisely and to adhere to the guidelines below.

Articles should ideally be no more than 11 typeset pages in length. As a guide, the main text (not including Abstract, Methods, References and figure legends) should be no more than 4,500 words. The maximum Article title length is 20 words. The Abstract – which must be no more than 200 words long and contain no references – should serve both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications.

For the main body of the text, there are no explicit requirements for section organization. According to the authors' preference, the text may be organized as best suits the research. As a guideline and in the majority of cases, however

What should I write a review on?

Something you know!!!!!!!!!

Good general knowledge of the field

Some specialist knowledge

But, seriously, what should I write a review on?

The easiest starting place:

Your grant applications

จะบ้าเหรอ – write review from proposal?!?!

This already has:

3. Introduction to the research problem and its significance

The mosquito transmitted flavivirus Zika virus is currently causing a massive outbreak of disease in much of South, Central and North America, with many millions affected. Of

4. Literature review

The first cases of autochthonous Zika virus infection in South America are reported to have occurred in March, 2015 [Campos et al., 2015; Zanluca et al., 2015]. From there the disease spread rapidly, and as of early 2016, more than 20 countries and territories

The literature review for this grant application was 2,000 words

Important note: This presupposes that you do a good, thorough job on your grant applications!!!!!!!!

Slides redacted

The published paper

Review

Zika virus: history of a newly emerging arbovirus

Nitwara Wikan, Duncan R Smith

Zika virus was originally identified in a sentinel rhesus monkey in the Zika Forest of Uganda in 1947. The virus is a member of the family Flaviviridae, genus *Flavivirus*, and is transmitted to humans by *Aedes* species mosquitoes. The first report of Zika virus outside Africa and Asia was in 2007 when the virus was associated with a small outbreak in Yap State, part of the Federated States of Micronesia. Since then, Zika virus infections have been reported around the world, including in southeast Asia; French Polynesia and other islands in the Pacific Ocean; and parts of South, Central, and North America. Symptomatic infection in human beings normally results in a mild and self-limiting febrile disease, although recent reports have suggested a possible association with more serious sequelae such as Guillain-Barré syndrome, and microcephaly in newborn infants of mothers infected with Zika virus during pregnancy. In this Review, we summarise the history of Zika virus from its first detection to its current worldwide distribution.

Lancet Infect Dis 2016; 16: e119–26

Published Online
June 6, 2016
http://dx.doi.org/10.1016/S1473-3099(16)30010-X

Institute of Molecular Biosciences (N Wikan PhD, Prof D R Smith PhD) **and Center for Emerging and Neglected Infectious Diseases** (Prof D R Smith), **Mahidol University, Salaya, Nakhon Pathom 73170, Thailand**

Correspondence to:
Prof Duncan R Smith, Molecular Pathology Laboratory, Institute of Molecular Biosciences, Mahidol University, Salaya, Nakhon Pathom 73170, Thailand
duncan.smi@mahidol.ac.th

Introduction

The first formal description of Zika virus was published in 1952,[1] and for much of the following 60 years, interest in this virus was confined to a few specialised researchers. Nowadays, Zika virus is making headlines around the world, and WHO has recently declared a public health emergency of international concern for Zika virus.[2] The reason for this dramatic change has been the increased detection of Zika virus worldwide and its association with increasingly large outbreaks of disease.[3–6] Before 2007, virological and immunological evidence suggested that although Zika virus was distributed widely in Africa

Zika virus is believed to be maintained primarily in nature in a sylvatic cycle of transmission between non-human primates and forest-dwelling mosquitoes,[17] although antibodies to Zika virus have been detected in several other non-primate mammals (as reported in[16]) and in rodents.[18] In this regard, many of the cases of Zika fever reported from Asia and Africa are likely to represent cases of spillover transmission from the sylvatic cycle, in which human beings became infected as an accidental host. The absence of monkeys in Yap State during the 2007 outbreak[12] and the scale of the more recent outbreaks[3] would suggest that an urban transmission

จะบ้าเหรอ

Grant applications ARE good starting points for reviews

1. You have already read the literature
2. You already have the right references
3. You have already largely drafted the text
4. You have already have a “viewpoint”

Edit and send!

The literature review in your thesis or your students thesis is also a reasonable starting place….

…but be careful about ethics!!

Digging through our old writing is one way

How else can we get suitable ideas for a review?

Current events

European Journal of Medicinal Chemistry 203 (2020) 112653

Contents lists available at ScienceDirect

European Journal of Medicinal Chemistry

journal homepage: http://www.elsevier.com/locate/ejmech

Research paper

Flavaglines as natural products targeting eIF4A and prohibitins: From traditional Chinese medicine to antiviral activity against coronaviruses

Canan G. Nebigil [a], Christiane Moog [b], Stéphan Vagner [c, d], Nadia Benkirane-Jessel [a, e], Duncan R. Smith [f], Laurent Désaubry [a, *]

[a] INSERM U 1260, Regenerative Nanomedicine (RNM), FMTS, 11 Rue Humann, 67000, Strasbourg, France
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[c] Institut Curie, PSL Research University, CNRS UMR 3348, INSERM U1278, Orsay, France
[d] Université Paris-Sud, Université Paris-Saclay, CNRS UMR 3348, INSERM U1278, Orsay, France
[e] Université de Strasbourg, Faculté de Chirurgie Dentaire, Hôpitaux Universitaires de Strasbourg, 8 Rue de Ste Elisabeth, 67000, Strasbourg, France
[f] Institute of Molecular Biosciences, Mahidol University, Salaya, 73170, Thailand

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ABSTRACT

Flavaglines are cyclopenta[*b*]benzofurans found in plants of the genus *Aglaia*, several species of which are used in traditional Chinese medicine. These compounds target the initiation factor of translation eIF4A and the scaffold proteins prohibitins-1 and 2 (PHB1/2) to exert various pharmacological activities, including antiviral effects against several types of viruses, including coronaviruses. This review is focused

Current events

Review A brief history of coronaviruses in Thailand

--Manuscript Draft--

Manuscript Number:	
Article Type:	VSI:Covid-19
Keywords:	Coronavirus; Coronaviridae; endemic viruses; introduced viruses; Thailand
Corresponding Author:	Duncan Smith Mahidol University Nakorn Pathom, Nakhon Pathom THAILAND
First Author:	Duncan Smith
Order of Authors:	Duncan Smith
Abstract:	As with many countries around the world, Thailand is currently experiencing restrictions to daily life as a consequence of the worldwide transmission of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is the third respiratory syndrome coronavirus to be introduced into Thailand, following previous importation of cases of the severe acute respiratory syndrome coronavirus (SARS) and the Middle East respiratory syndrome coronavirus (MERS). Unlike SARS and MERS, SARS-CoV-2 was able to establish local transmission in Thailand. In addition to the imported coronaviruses, Thailand has a number of endemic coronaviruses that can affect livestock and pet species, can be found in bats, as well as four human coronaviruses that are mostly associated with the common cold. This article seeks to review what is known on both the endemic and imported coronaviruses in Thailand.

Disclosure: It ended up not so brief at 8,000 words and 122 references!

Our Zika review was:

What is Zika virus, and how did it spread around the world?

Background knowledge:

(i) Zika virus is a flavivirus
(ii) There are 53 species of virus in this genus
(iii) 28 or so are mosquito transmitted
(iv) Some are well known (Dengue, JEV, YF, WNV, Zika)
(v) Some are not well known (like Zika until recently)

Question:

Of the less well known flaviviruses, which is next likely to emerge?

Waiting in the wings: The potential of mosquito transmitted flaviviruses to emerge

Duncan R. Smith*

Institute of Molecular Biosciences and Center for Emerging and Neglected Infectious Diseases, Mahidol University, Thailand

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CRITICAL REVIEWS IN MICROBIOLOGY, 2017
VOL. 43, NO. 4, 405–422
http://dx.doi.org/10.1080/1040841X.2016.1230974

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REVIEW ARTICLE

Waiting in the wings: The potential of mosquito transmitted flaviviruses to emerge

Duncan R. Smith

Institute of Molecular Biosciences and Center for Emerging and Neglected Infectious Diseases, Mahidol University, Thailand

ABSTRACT

The sudden dramatic emergence of the mosquito transmitted flavivirus Zika virus has bought to the world's attention a relatively obscure virus that was previously only known to specialist researchers. The genus *Flavivirus* of the family *Flaviviridae* contains a number of well-known mosquito transmitted human pathogenic viruses including the dengue, yellow fever, Japanese encephalitis and West Nile viruses. However, the genus also contains a number of lesser known human pathogenic viruses transmitted by mosquitoes including Wesselsbron virus, Ilheus virus, St. Louis encephalitis virus and Usutu virus. This review summarizes our knowledge of these lesser known mosquito transmitted flaviviruses and highlights their potential to emerge.

ARTICLE HISTORY
Received 18 February 2016
Revised 22 August 2016
Accepted 29 August 2016

KEYWORDS
Emerging infectious diseases; zoonosis; global footprint; human disease

Introduction

Before 2013, the mosquito transmitted flavivirus Zika

assigned to the "no known arthropod vector" cluster have no clear transmission agent and there are no clear

How long to write these (full time days)?

From a draft:
Stem cell/viruses – about 7 or 8 days
Zika virus – 14 full days

From idea:
Flaviviruses – 5 full weeks (including weekends)

Thalassemia review – two to three weeks

With other things, I plan 1 month(ish)

Rev. Med. Virol. 2015; **25**: 3–18.
Published online 27 July 2014 in Wiley Online Library
(wileyonlinelibrary.com)
DOI: 10.1002/rmv.1802

Reviews in Medical Virology

REVIEW

Global protein profiling studies of chikungunya virus infection identify different proteins but common biological processes

Duncan R. Smith[1,2*]

[1]*Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand*
[2]*Center for Emerging and Neglected Infectious Diseases, Mahidol University, Bangkok, Thailand*

SUMMARY

Chikungunya fever (CHIKF) caused by the mosquito-transmitted chikungunya virus (CHIKV) swept into international prominence from late 2005 as an epidemic of CHIKF spread around countries surrounding the Indian Ocean. Although significant advances have been made in understanding the pathobiology of CHIKF, numerous questions still remain. In the absence of commercially available specific drugs to treat the disease, or a vaccine to prevent the diseases, the questions have particular significance. A number of studies have used global proteome analysis to increase our understanding of the process of CHIKV infection using a number of different experimental techniques and experimental systems. In all, over 700 proteins have been identified in nine different analyses by five different groups as being differentially

Published Jan 2015

- about a 6 weeks to 2 months (a lot of data analysis)

If from a grant application/literature review

What was the research question in your grant?

Why is this a research question?

What is known?

What is not known?

State of the art review

If from research results:

OPEN ACCESS Freely available online

PLoS one

Proteomic Analysis of Chikungunya Virus Infected Microgial Cells

Bizunesh Abere[1], Nitwara Wikan[1], Sukathida Ubol[2,3], Prasert Auewarakul[3,4], Atchara Paemanee[5], Suthathip Kittisenachai[5], Sittiruk Roytrakul[5]*, Duncan R. Smith[1,3]*

1 Molecular Pathology Laboratory, Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand, **2** Department of Microbiology Faculty of Science, Mahidol University, Bangkok, Thailand, **3** Center for Emerging and Neglected Infectious Diseases, Mahidol University, Bangkok, Thailand, **4** Department of Microbiology, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand, **5** Genome Institute, National Center for Genetic Engineering and Biotechnology, National Science and Technology Development Agency, Pathumthani, Thailand

Abstract

Chikungunya virus (CHIKV) is a recently re-emerged public health problem in many countries bordering the Indian Ocean and elsewhere. Chikungunya fever is a relatively self limiting febrile disease, but the consequences of chikungunya fever can include a long-lasting, debilitating arthralgia, and occasional neurological involvement has been reported. Macrophages

Question:
Why do these studies identify different proteins?
-how about other studies?

Wikan *et al. Journal of Translational Medicine* 2014, **12**:96
http://www.translational-medicine.com/content/12/1/96

JOURNAL OF TRANSLATIONAL MEDICINE

RESEARCH Open Access

Comprehensive proteomic analysis of white blood cells from chikungunya fever patients of different severities

Nitwara Wikan[1], Sarawut Khongwichit[1], Weerawat Phuklia[2], Sukathida Ubol[2,3], Tipparat Thonsakulprasert[4], Montri Thannagith[4], Duangrudee Tanramluk[1], Atchara Paemanee[5], Suthathip Kittisenachai[5], Sittiruk Roytrakul[5] and Duncan R Smith[1,3*]

Abstract

Background: Chikungunya fever (CHIKF) is a recently re-emerged mosquito transmitted viral disease caused by the chikungunya virus (CHIKV), an *Alphavirus* belonging to the family *Togaviridae*. Infection of humans with CHIKV can

Table 1. Global protein profiling studies of chikungunya virus infection. The studies, together with the study materials, proteomic methodology, and number of proteins detected as differentially regulated are listed

Study [reference]	Study materials	Proteomic methodology	Proteins differentially regulated
Dhanwani *et al.*, 2011 [98]	New born mice (liver and brain)	2D	35 (liver) 15 (brain)
Abere *et al.*, 2012 [97]	CHME-5 (microglial cells)	2D, GeLC	90
Puttamallesh *et al.*,, 2013 [101]	Serum of CHIKF patients	iTRAQ	63
Thio *et al.*, 2013 [102]	WRL-68 (hepatocyte like)	2D	53
Wikan *et al.*, 2014 [103]	White blood cells	GeLC	308
Fraisier *et al.*, 2014 [100]	Mouse brain	2D DIGE, iTRAQ	177
Dhanwani *et al.*, 2014 [99]	Mouse muscle	2D	27

CHIKF, chikungunya fever; CHIKV, chikungunya virus; iTRAQ, isobaric tags for relative and absolute quantitation; 2D-DIGE, two-dimensional difference in gel electrophoresis; GeLC, Gel-enhanced liquid chromatography.

Narrative review

Impact >6

But be careful:

There were ONLY 7 published studies

A comprehensive review, not a mini-review

Rev. Med. Virol. 2015; **25**: 3–18.
Published online 27 July 2014 in Wiley Online Library (wileyonlinelibrary.com)
DOI: 10.1002/rmv.1802
Reviews in Medical Virology

REVIEW

Global protein profiling studies of chikungunya virus infection identify different proteins but common biological processes

Duncan R. Smith[1,2*]
[1]*Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand*
[2]*Center for Emerging and Neglected Infectious Diseases, Mahidol University, Bangkok, Thailand*

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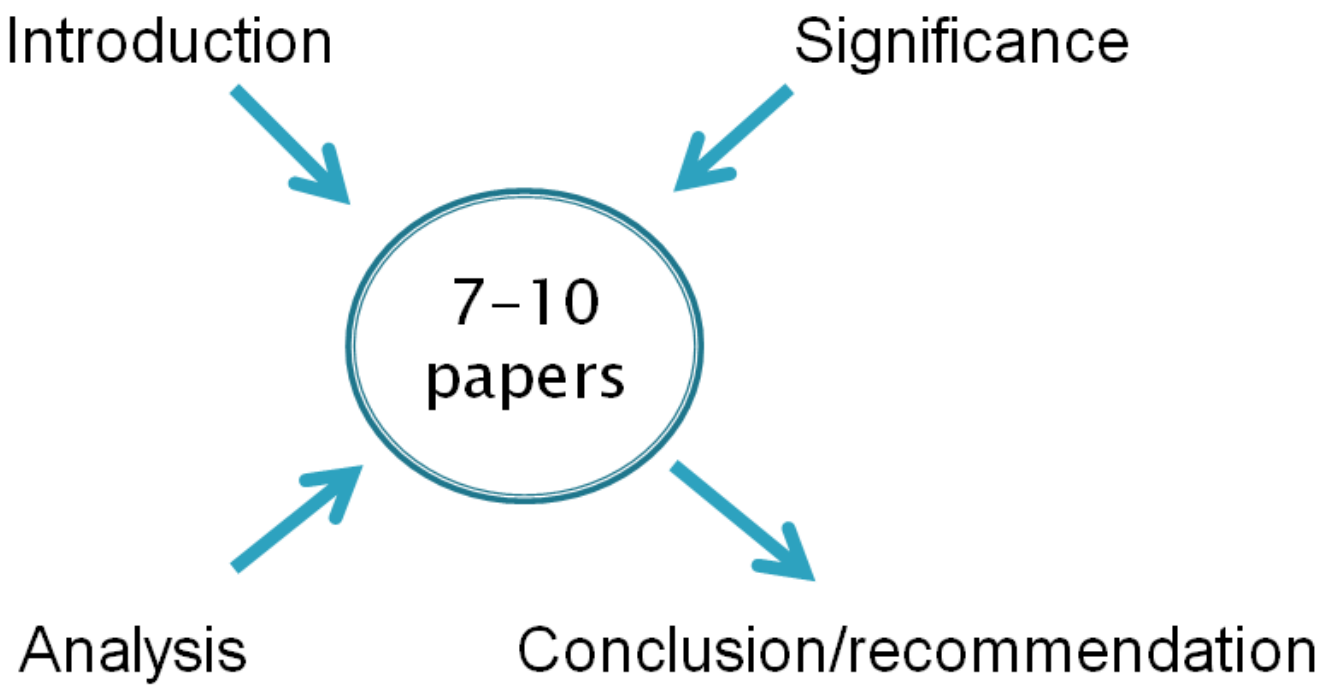
Chikungunya fever (CHIKF) caused by the mosquito-transmitted chikungunya virus (CHIKV) swept into international prominence from late 2005 as an epidemic of CHIKF spread around countries surrounding the Indian Ocean. Although significant advances have been made in understanding the pathobiology of CHIKF, numerous questions still remain. In the absence of commercially available specific drugs to treat the disease, or a vaccine to prevent the diseases, the questions have particular significance. A number of studies have used global proteome analysis to increase our understanding of the process of CHIKV infection using a number of different experimental techniques and experimental systems.

125 references

A manageable focused review:



When is a good time to write?

When you have published in this area

- you can include your work and citation to it!

OK. I want to write a review on……

what do I do next?

1. Check has there been a recent review on the same subject?
2. If no – start writing!
3. If yes – plan how yours will be different (more up to date?)
4. DO NOT READ OTHER REVIEWS!!
5. Only read original articles, and formulate YOUR ideas

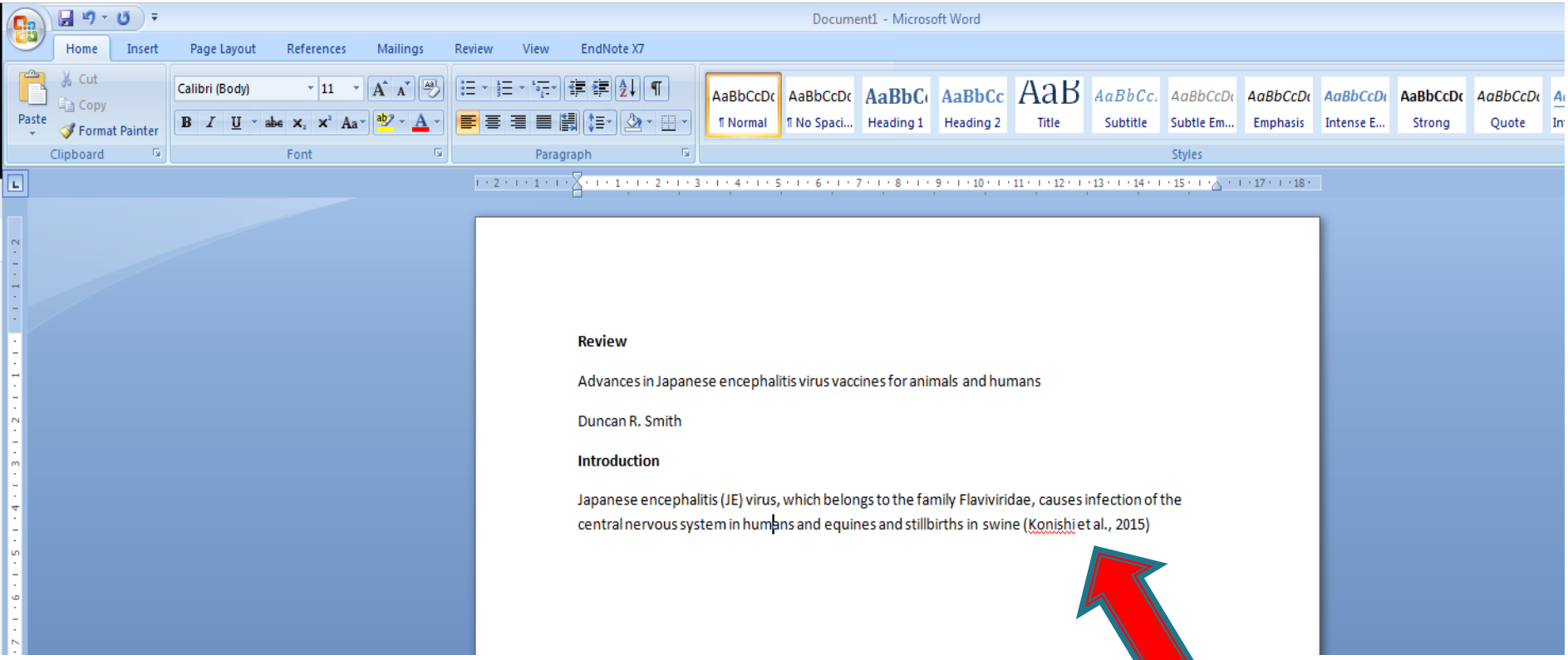
Reading a paper – the deadly trap!

Japanese Encephalitis DNA Vaccine Candidates Expressing Premembrane and Envelope Genes Induce Virus-Specific Memory B Cells and Long-Lasting Antibodies in Swine

Eiji Konishi,*[,2] Masaoki Yamaoka,*[,1] Ichiro Kurane,† and Peter W. Mason‡

INTRODUCTION

Japanese encephalitis (JE) virus, which belongs to the family Flaviviridae, causes infection of the central nervous system in humans and equines and stillbirths in swine (Shope, 1980; Monath, 1986). The virus has a zoonotic transmission cycle between birds and mosquitoes, with swine serving as an intermediate amplifier from which anthrophilic mosquitoes become infected, spreading virus to humans (Scherer *et al.,* 1959; Konno *et al.,* 1966; Oya, 1967). Therefore, mass vaccination of swine can prevent disease in swine and help to prevent JE epidemics in humans (Igarashi, 1992). Current JE vaccines for use in swine consist of attenuated or inactivated virus (Fujisaki, 1975; Inoue, 1975; Kurata, 1980a, b; Yoshida, 1981; Yamagishi, 1989), and there are concerns about the safety and cost of producing and using these products. Recently, molecular biology has been used to develop experimental vaccines for several viral diseases, which could overcome some of the drawbacks of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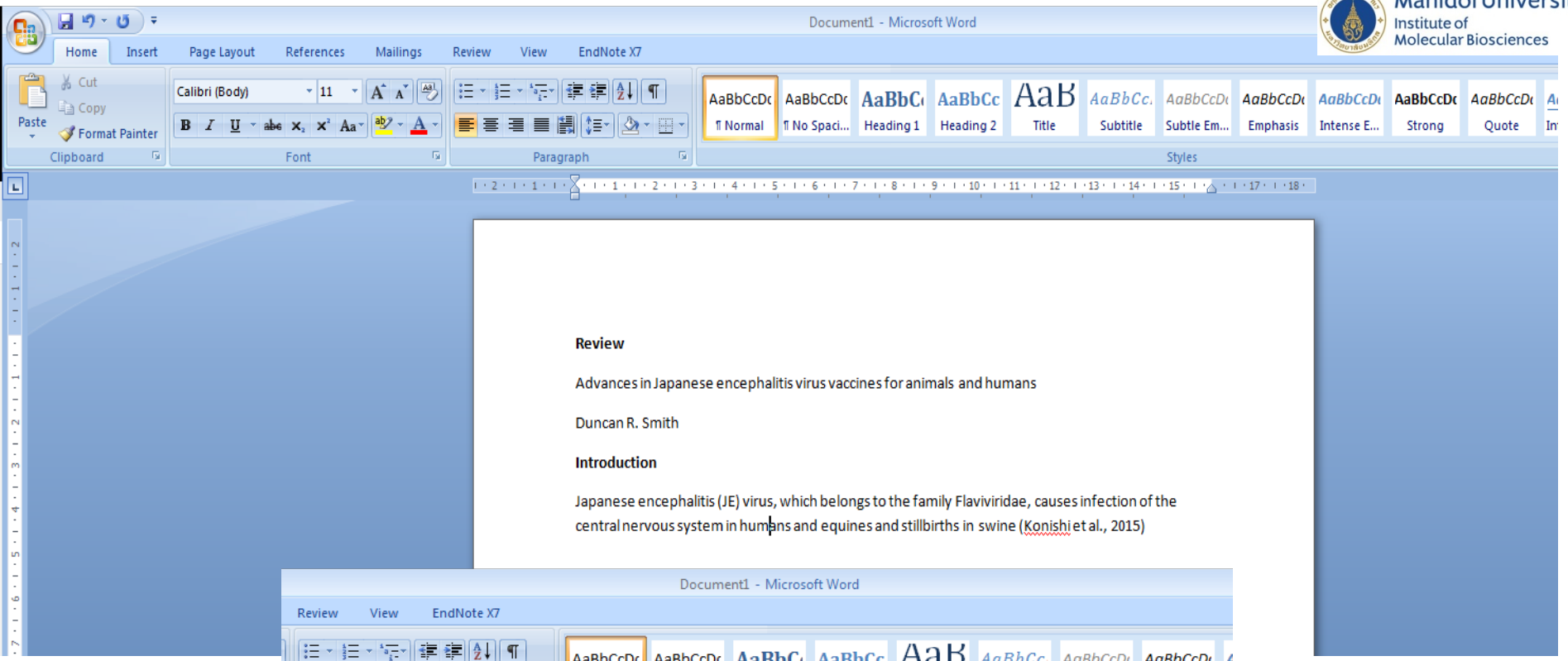
Strong
Quote
Styles
Review
Advances in Japanese encephalitis virus vaccines for animals and humans
Duncan R. Smith
Introduction
Japanese encephalitis (JE) virus, which belongs to the family Flaviviridae, causes infection of the central nervous system in humans and equines and stillbirths in swine (Konishi et al., 2015)

Is this OK?

Plagiarism is the "wrongful appropriation" and "purloining and publication" of another author's "language, thoughts, ideas, or expressions," and the representation of them as one's own original work.

Plagiarism can result in your paper being retracted, and possible loss of promotion if used as part of an application package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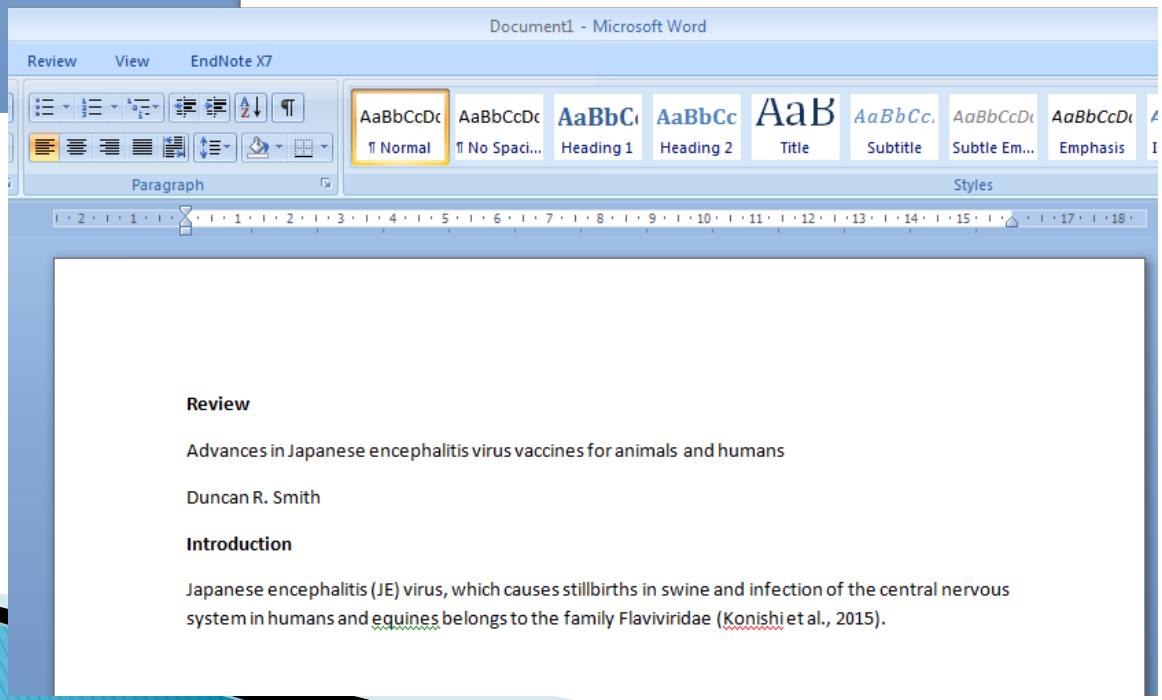
Document1 - Microsoft Word
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Review
Advances in Japanese encephalitis virus vaccines for animals and humans
Duncan R. Smith
Introduction
Japanese encephalitis (JE) virus, which causes stillbirths in swine and infection of the central nervous system in humans and equines belongs to the family Flaviviridae (Konishi et al., 2015).

How do we avoid this trap?

1. Read the paper(s) or the section(s) of the paper(s)

2. Go away – do something else!

3. Come back and write the concept of what you understood, using your own words.

4. Ideally (!) read from several papers and summarize

If you simply MUST, MUST, MUST use someone else's words

MAKE IT CLEAR!!!!!

Several diverse dengue virus receptors have previously been identified. As stated by Smith (2011) in his recent paper:

"*The proteins identified to date as putative dengue virus receptors are a diverse group of proteins that show little functional or structural homology, suggesting that the dengue virus is capable of utilizing numerous different protein: protein interactions as an initial step in the virus entry process*"

indicating that the virus is well adapted to gaining entry to the cellular machinery via multiple mechanisms.

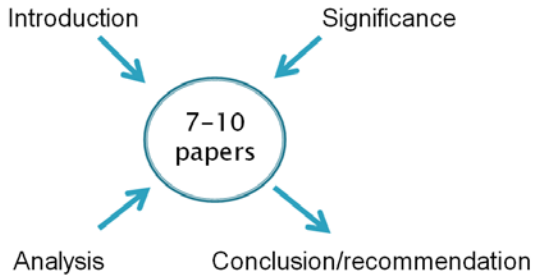
In this example, the quotation marks, italics and offset text clearly show this is not original material.

But – it is better NOT to use this method

How to structure your writing?

1. Decide rough format (comprehensive/focused)
2. Decide length (full/mini)

Start with the “guts” of the manuscript



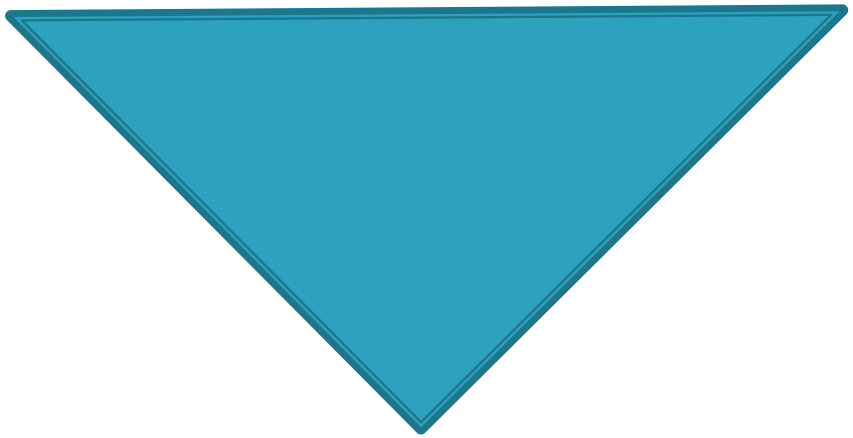
3. Add the Introduction, slant to your “guts”
4. <u>What does it mean? What do you think?</u>

Notes:

Stick to your plan – if doing a focused review – keep it focused!
You do not need to write alone – can divide sections out for different writers

Introduction (paper): the inverted triangle

Example project: to identify dengue virus receptor proteins



Dengue disease, incidence, transmission

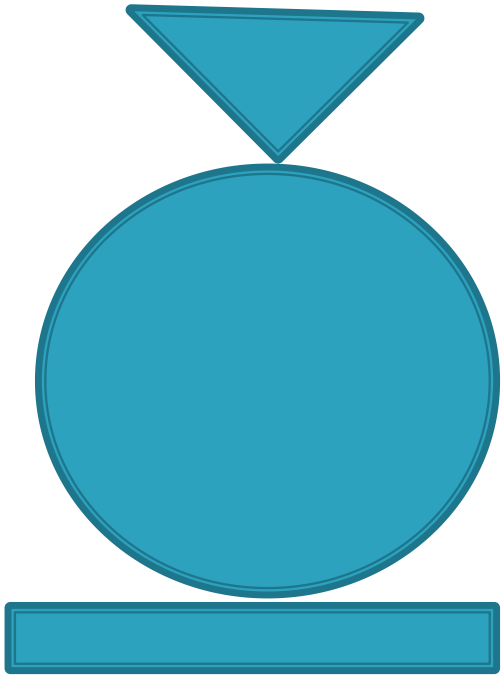
Dengue virus structure and element involved in entry to cells

Method by which virus enter cells

Other dengue receptors identified

Reason for doing this review

Overall structure of a review:



Introduction (background and why do a review)

Main text (subdivided)

Conclusion/recommendation

When writing, you should be “neutral” as well as fair and balanced. You CAN point out flaws in other studies (just make sure you are right!)

But you should have a viewpoint (conclusions, recommendations, future directions etc)

Remember – YOU decide the scope of the review

Waiting in the wings: The potential of mosquito transmitted flaviviruses to emerge

Duncan R. Smith*

Institute of Molecular Biosciences and Center for Emerging and Neglected Infectious Diseases, Mahidol University, Thailand

*Correspondence to:

Duncan R. Smith, Institute of Molecular Biosciences, Mahidol University, Salaya Campus, 25/25 Phuttamontol Sai 4, Salaya, Nakorn Pathom, Thailand 73170

SCOPE

23 virus species (!)

Geographic foot print
Mosquito species
Human cases

EXCLUDED or ONE to TWO LINES: genome characterization, detection methods, molecular biology of flaviviruses, phylogeny of flaviviruses, vaccine development, pathophysiology, immunology, mosquito habitats, cytokines, chemokines, etc etc etc

Having a structure worked out first helps keep you on track

Zika virus: The history of a newly emerging arbovirus

Nitwara Wikan and Duncan R. Smith*

Institute of Molecular Biosciences, Mahidol University, Thailand

Abstract

Zika virus was originally identified in a sentinel rhesus monkey in Zika forest of Uganda in 1947. The virus is a member of the family Flaviviridae, genus Flavivirus and is transmitted to humans by Aedes species mosquitoes. The first report of Zika virus out of Africa and Asia was in 2007 when the virus was associated with a small outbreak in the Yap Islands. Since then, Zika virus infections have been reported around widely around the globe including in Southeast Asia, French Polynesia and the Pacific Islands, and parts of South America. Human infection normally results in a relatively mild and self limiting febrile disease, although recent reports have suggested a possible association with more serious sequelae such as Guillain-Barre syndrome as well as microcephaly in new born infants. This review summarizes the history of Zika virus from its first detection to the current worldwide distribution of this virus.

Introduction

Zika virus and virus transmission

Virus and genome, mosquito species as transmission agents, transmission cycles

Zika virus identification and early epidemiology

First isolation, seroprevalence studies in Africa and Asia

Zika virus epidemiology: the Yap Islands

Outbreak description, cross reaction with dengue, identification of Zika, viremia levels, USA scientists, sexual transmission (?)

Zika virus epidemiology: Southeast Asia

Cambodia (2010), Philippines (2011), Indonesia (travel associated, 2013), Thailand (2012 - 2014; Canadian, German travelers, identification in Thailand, Japanese tourist),

Zika virus epidemiology: French Polynesia and the Pacific Islands

French Polynesia (Oct 2013), Tahiti (tourist; Dec 2013), New Caledonia (Jan 2014, plus co-infection dengue/zika), Cook Islands, Easter Island

Zika virus epidemiology: South America

Camacari and Natal (March 2015) Introduction theories (World cup or Va'a World Sprint Championship), size of outbreak, update as of 21 January 2016

Ziak virus: A changing clinical presentation?

Early reports/later reports, Guillain-Barre syndrome and microcephaly *(not completed)*

Conclusions

(*not completed*)

Having a structure worked out first helps keep you on track

Waiting in the wings: The potential of mosquito transmitted flaviviruses to emerge

Duncan R. Smith

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Abstract
The sudden dramatic emergence of the mosquito transmitted flavivirus Zika virus has bought to the world's attention a relatively obscure virus that was previously only known to specialist researchers. The genus *Flavivirus* of the family *Flaviviridae* contains a number of well known mosquito transmitted human pathogenic viruses including the Dengue, Yellow fever, Japanese encephalitis and West Nile viruses. However, the genus also contains a number of lesser known human pathogenic viruses transmitted by mosquitoes including Wesselsbron virus, Ilheus virus, St. Louis encephalitis virus and Usutu virus. This review summarizes our knowledge of these lesser known mosquito transmitted flaviviruses, and highlights their potential to emerge.

Introduction
Flaviviruses, mosquito transmitted, tick transmitted, no vector, complexes
Possible lessons from the emergence of Zika virus
Wide geographic footprint, occasional human cases, mosquito species
The Aroa virus complex
Aroa virus, Bussuquara virus, Iguape virus and Naranjal virus
Dengue virus complex
Dengue virus, Kedougou virus
Japanese encephalitis virus complex
Japanese encephalitis virus, West Nile virus, Yaounde virus, Cacipacore virus, Koutango virus, Murray Valley encephalitis virus and Alfuy virus, St. Louis encephalitis virus, Usutu virus
Kokobera virus complex
Kokobera virus and Stratford virus
Ntaya virus complex
Ntaya virus, Bagaza virus, Ilheus virus, Tembusu virus and Israel turkey meningoencephalomyelitis virus (note: Tembusu)
Spondweni virus complex
ZIKV and Spondweni virus
Yellow fever virus complex
Yellow fever virus, Banzi virus, Edge Hill virus, Sepik virus, Uganda S virus and *Wesselsbron virus, Bouboui virus, Jugra virus* and *Saboya virus*
Conclusions

Do I need to be a big name in the field?

No. And yes.

At the higher end of the publishing spectrum you might need to have prior publications, and for them to be included in the review

For some (high end) journals, at the time of pre-submission enquiry, you might need to provide a CV showing you are an expert in this area.

I am not senior enough to write one yet

Trends in Food Science & Technology 83 (2019) 167–180

Contents lists available at ScienceDirect

Trends in Food Science & Technology

journal homepage: www.elsevier.com/locate/tifs

Review

Recent understanding of starch biosynthesis in cassava for quality improvement: A review

Piengtawan Tappiban[a,b,c], Duncan R. Smith[b], Kanokporn Triwitayakorn[b,c,**], Jinsong Bao[a,*]

[a] Institute of Nuclear Agricultural Sciences, College of Agriculture and Biotechnology, Zhejiang University, Hangzhou, 310029, China
[b] Institute of Molecular Biosciences, Mahidol University, Salaya, NakhornPathom, 73170, Thailand
[c] Center of Excellence on Agricultural Biotechnology (AG-BIO/PERDO-CHE), Bangkok, 10900, Thailand

ARTICLE INFO

Keywords:
Cassava
Starch biosynthesis
Starch quality
Molecular breeding

ABSTRACT

Background: Starch is the most important carbohydrate source of plant species. Both amylose and amylopectin are components of starch whose content and structures contribute to its unique properties used in food processing and industrial applications. Cassava (*Manihot esculenta* Crantz) is a starchy root crop used as a staple food for human consumption in tropical and sub-tropical regions, as well as in numerous industrial applications. Starch biosynthesis is controlled by various isoforms of several enzymes which are expressed during root development, and considerable effort has been made in understanding the mechanisms of starch biosynthesis and regulation. The improvement of cassava starch for both consumption and the starch industry has been a major goal of breeders.

Scope and approach: The review summarizes the identification of genes and enzymes involved in starch biosynthesis and the mechanisms of gene regulation in cassava. Quantitative trait loci (QTLs) and candidate genes associated with the important quality traits and mutations affecting starch physicochemical properties are also summarized.

Key findings and conclusions: A total of 45 genes participating in starch biosynthesis in cassava including ADPG pyrophosphorylase (AGPase), granule bound starch synthase (GBSS), starch synthase (SS), starch branching enzyme (SBE), de-branching enzyme (DBE) and glucan, water dikinase (GWD) have been identified and their functions have been characterized. A total of 110 QTLs for starch content and pasting properties have been identified. These genes and QTLs will contribute to the improvement of starch quality by current biotechnolo-

Do I need to write with a senior researcher in the field?

No……..

But……

Can I ask a senior to read over and give input?

Sure…….but…

One important point:

Although the article is a review, you are normally allowed to add funding sources (just change the wording slightly)

Research paper: This work is supported by…
Review: DRS is supported by…..

Lastly, for medical doctors

Systematic reviews, best practice reviews and meta-analysis
have very strict guidelines. These types of reviews should be prepared using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist.

The PRISMA checklist requires detailed search strategy,
inclusion/exclusion criteria, methods of handling data etc.
You must be familiar with this BEFORE starting to write/obtain papers etc

Conclusions

Journals like reviews
Reviews can start from as little as 1,500 words
Avoid comprehensive reviews, aim for focused reviews
Focused does not mean “mini”
Grants ARE good starting points
Things you wonder about are good starting points
What is going on is a good starting point
Aiming for 7 – 10 “core” papers makes a review manageable
If you are interested in it, chances are other people are as well

ANY QUESTIONS?