



Peer Review

Anothai Pocathikorn, PhD

Faculty of Medicine, Prince of Songkla University



Learning Objectives



ประวัติและวิวัฒนาการของ Peer Review

ชนิดของ Peer Review

คุณค่าของ Peer Review ต่อการตีพิมพ์และการขอทุน

ประเด็นจริยธรรมที่เกี่ยวข้องกับ Peer Review

ความรับผิดชอบของการทำหน้าที่ Peer Review

Definition

Peer review - พิชญพิจารณา

(ศัพท์บัญญัติ จาก พจนานุกรมศัพท์ศึกษาศาสตร์ ราชบัณฑิตยสถาน)

การตรวจและพิจารณาผลงานทางวิชาการโดยผู้รู้ในวงวิชาการเดียวกัน
เพื่อประเมินคุณภาพก่อนตีพิมพ์ในวารสารวิชาการ ผู้ตรวจบทความ
บทความวิจัยหรือผลงานอื่น ต้องมีคุณสมบัติ ความรู้ ประสบการณ์เท่ากัน
หรือสูงกว่าผู้ส่งผลงาน อยู่ในวงวิชาการเดียวกับผู้ส่งผลงาน และต้องมี
ความเชี่ยวชาญในสาขาวิชาของผลงานนั้น

Peer Review

- Informal Review:

- Networking, conferences



- Formal Review:

- Editorial process: Reviewer, Referee



- Review Committees

- Institutional Review Boards (IRB), Ethical Review Committee (EC)



ประวัติและวิวัฒนาการของ Peer Review

The Royal Society of London:
The Philosophical Transactions of the
Royal Society of London
The Paris Academy of Sciences:
The Journal des Scavans

1665

1752

Contemporary Peer Review

A Formal process for evaluating
and reviewing submitted
manuscripts

1830s

1918

The Journal of the Medical
Association of Thailand

The National Cancer Institute:
Peer Review process for
published articles and grant
funding

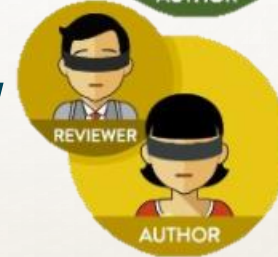
1937

ชนิดของ Peer Review

- Single blind review



- Double-blind review



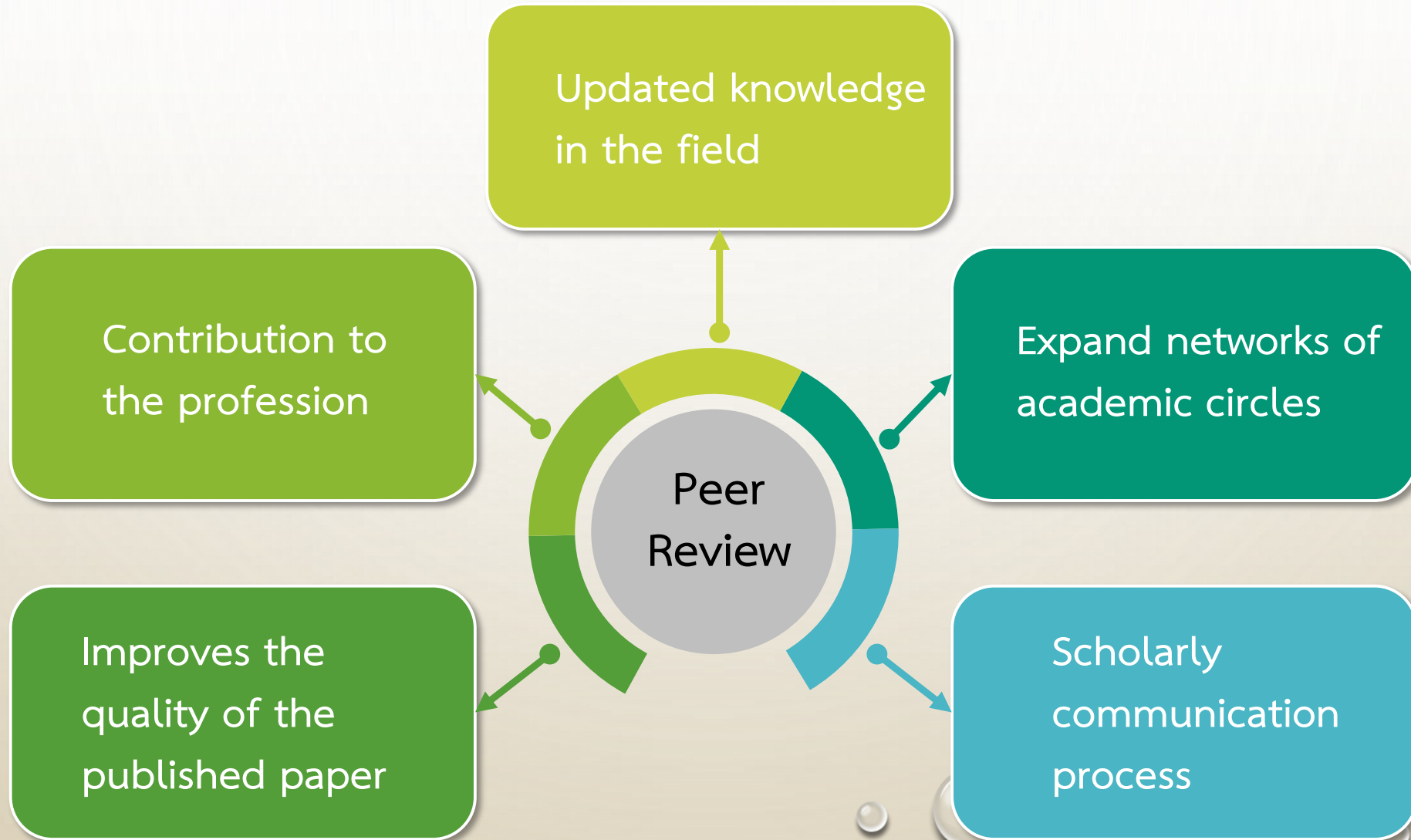
- Triple-blind review



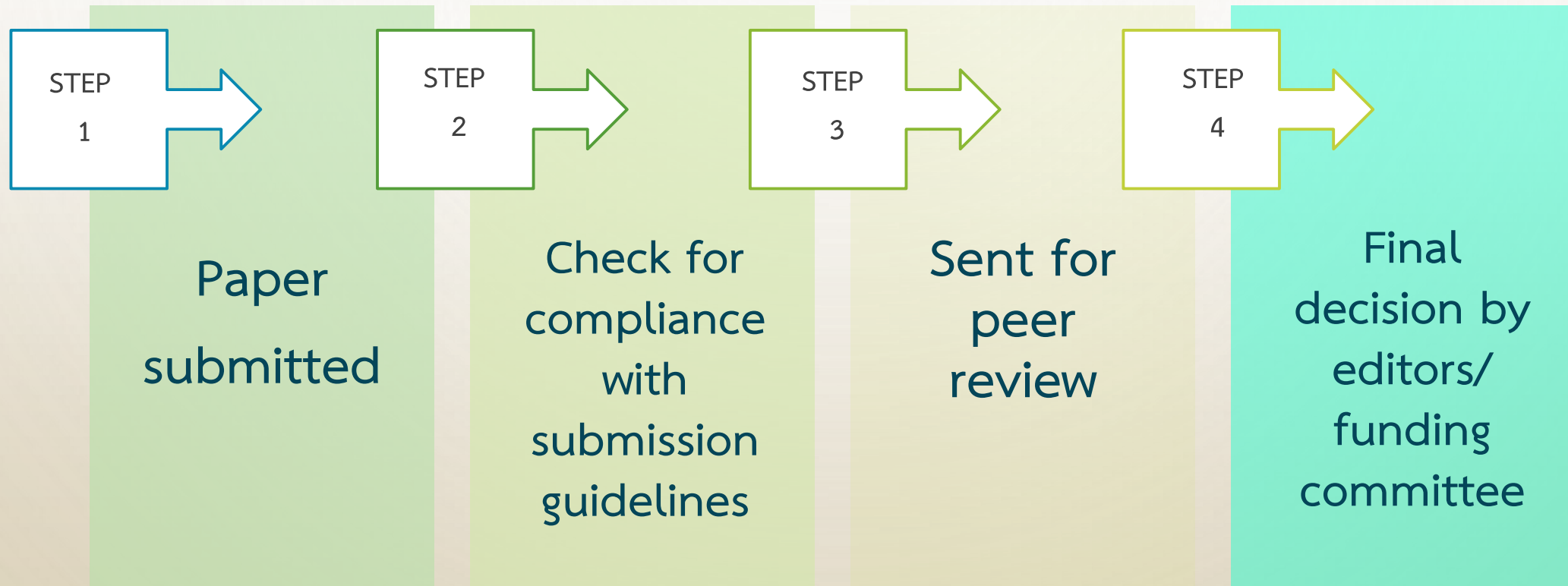
- Open review

<https://twitter.com/Editage/status/1028612145574019075/photo/1>

คุณค่าของ Peer Review



กระบวนการ Peer Review



Journal publication



01

Appropriateness of the subject as it relates to the journal's focus

02

Originality and significance of the findings

03

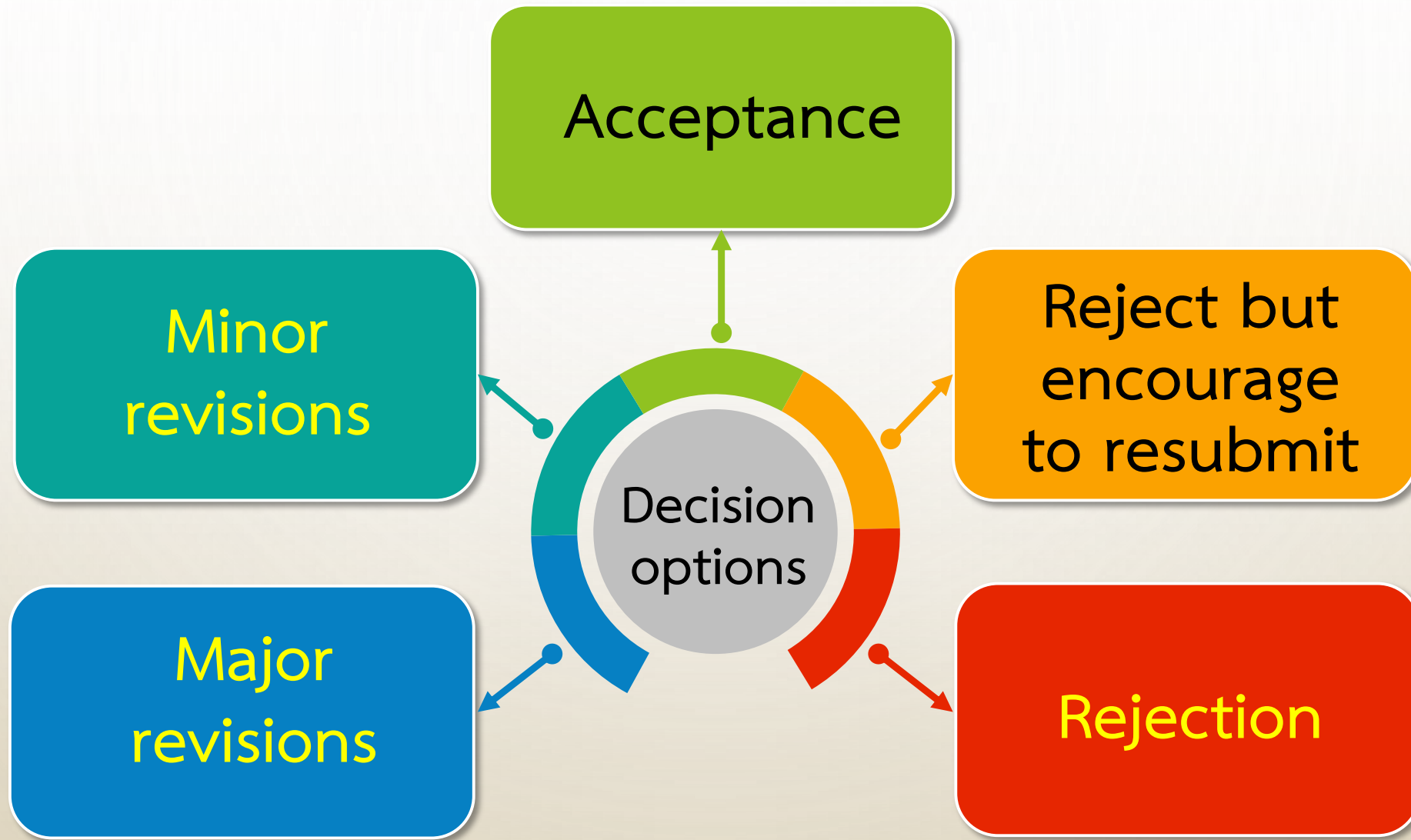
Validity of the methodology

04

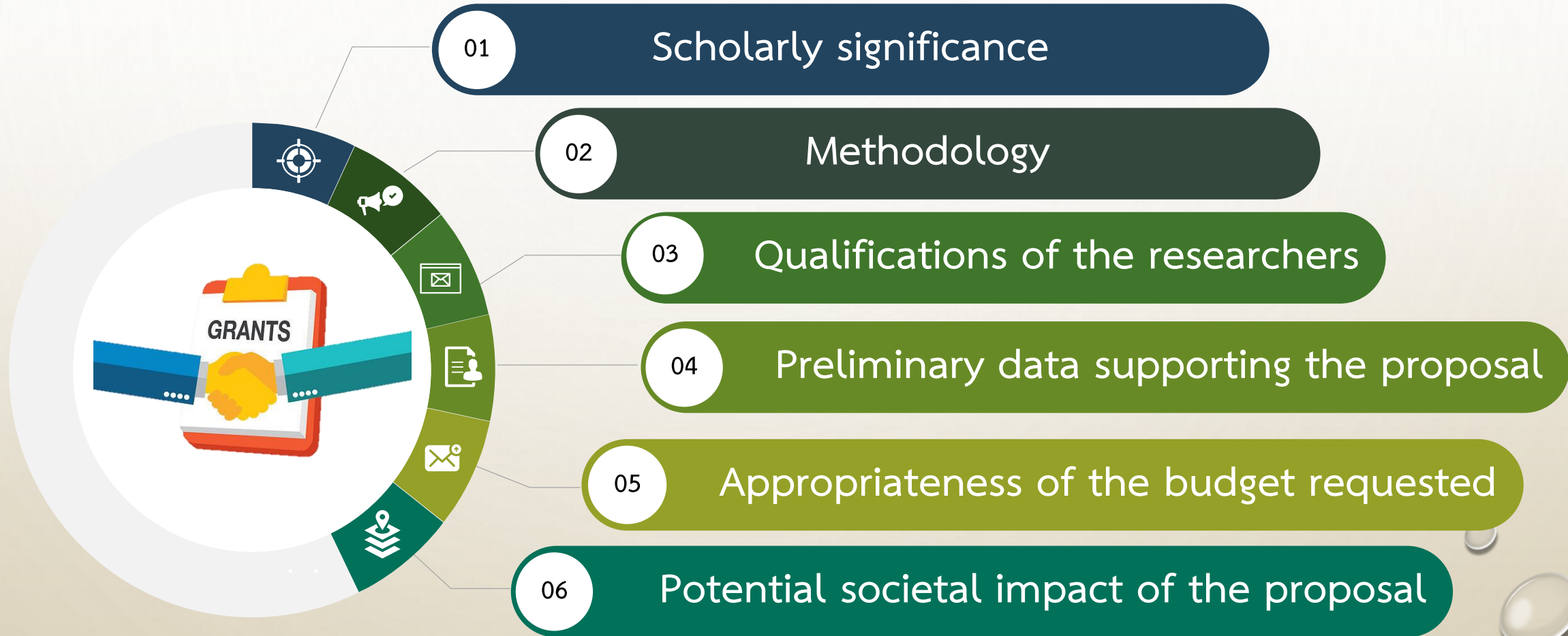
Strength of the results and conclusion

05

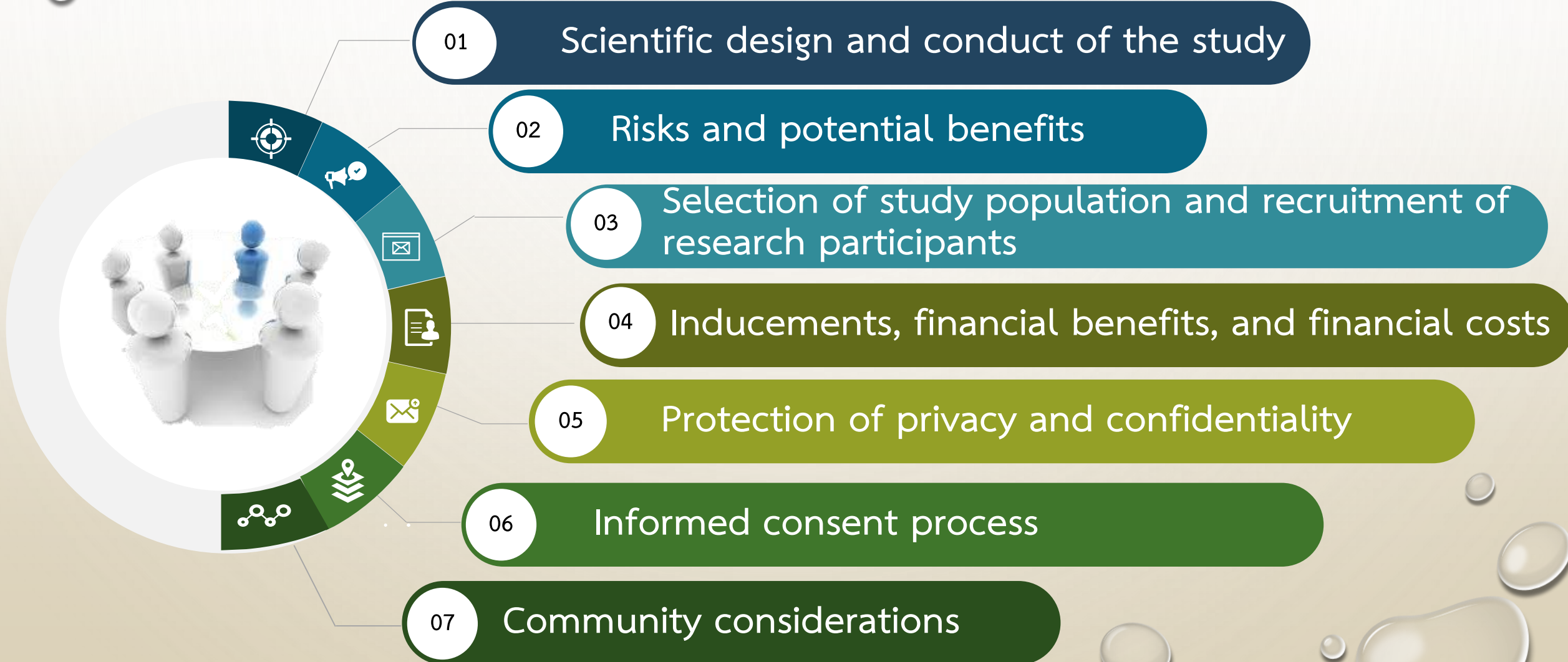
Quality of the writing



Grant funding



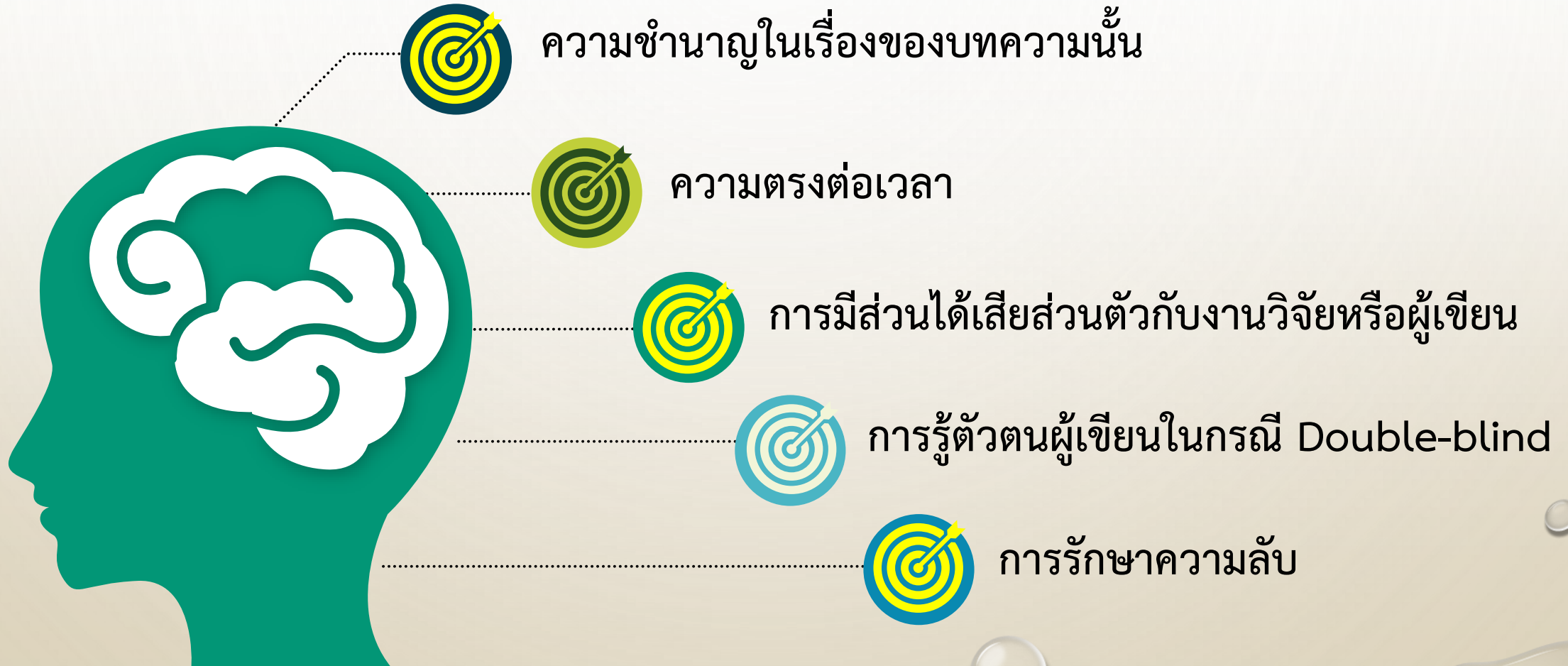
Research Ethics Committees



ประเด็นจริยธรรมใน Peer Review



Reviewer Ethics



Evaluation Criteria

- ☒ Give topic-specific expertise
- ☒ Indicate strengths and weaknesses
- ☒ Assess validity of study
- ☒ Bias-free, inclusive language
- ☒ Academic writing style
- ☒ Language quality
- ☒ Cohesiveness
- ☒ Provide information for an appropriate decision
- ☒ Protect against author misconduct



Evaluation steps

Initial Assessment



Does the article read well?



Does it meet the journal's
aims & scope?



Contributing to field clear?



In-Depth Review

Title

Abstract

Title Title Title Title Title Title Title Title Title Title Title
Title Title Title Title Title Title Title Title Title Title Title
Title Title Title Title Title Title Title Title Title Title Title

ABSTRACT

[illegible]

Keywords: Keyword, Keyword, Keyword, Keyword,

Keywords

In-Depth Review

Introduction

Reference citations

Aims

INTRODUCTION

In the pathogenic cascade of Alzheimer's disease (AD), misfolding, aggregation and deposition of amyloid β (A β) peptides in the brain parenchyma and vessel walls lead to severe consequences (Watson *et al.*, 2005). Over the past couple of decades, several studies have highlighted that the A β aggregates as being the core determinants in molecular mechanisms contributing to AD (De Felice *et al.*, 2008; Guglielmotto *et al.*, 2014). In addition, it was proposed that there are different A β assemblies, each characterized by different molecular sizes, stability and neurotoxic characteristics (Jin *et al.*, 2011). However, their particular significance to AD pathogenesis is uncertain. Natural products, in which their phytochemicals are known to have numerous beneficial biological neuroprotective effects, are of specific concern to scientists in this era (Bui & Nguyen, 2017).

We previously demonstrated neuroprotective effects of combined treatment with curcumin and piperine against A β induced degeneration by in silico and in vitro assays (Manop *et al.*, 2019). Curcumin and piperine at 35 μ M in combination were able to inhibit neurotoxicities, aggregation and disaggregate A β fibrils as well as reversed A β -induced neuronal oxidative stress (Manop *et al.*, 2019). In the present study, we continue our investigation at a molecular level by using high-throughput microarray technology in order to elucidate differences in the gene expression profiles between AD and treatment groups. Gene expression microarray offers a new tool to address complexity, allowing for overviews in concurrently multiple cellular pathways. The main benefit of the microarray approach is the capacity to explore thousands of genes of interests simultaneously, although low statistical power, elevated false positives or false negatives and unclear reference to functional endpoints often hinder data interpretation.

In-Depth Review

Materials & methods

MATERIALS & METHODS

A β fibril preparation

Synthetic A β 42 peptide was purchased from American Peptide (Sigma, USA) and prepared following the protocols described previously (Culver et al., 2010; Tyksa, 2010) with some modifications (Fig. 1). In brief, the A β 42 peptide was dissolved to 1 mM in 100% 1, 1, 1, 3, 3, 3-hexafluoro-2-propanol (HFP, Sigma) and aliquoted in non-elliptical polypropylene vials. The vials were left in the fume hood overnight to remove HFP. The traces of HFP were removed using a rotary evaporator (Speed Vac) (Thermo Fisher Scientific, US) on the following day and re-suspended in dimethyl sulfoxide (DMSO) to a concentration of 1 mM. To form fibrillar conditions, the peptide was diluted to a final concentration of 100 μ M with 10 mM of acid hydrochloric (HCl) solution and incubated at 4 °C for 24 h.

Thioflavin T microscopy staining

In order to confirm the uptake of A β in the cell, Thioflavin T (ThT) fluorescence assay was performed as described previously (Jin et al., 2010). Thioflavin T is a benzothiazine dye that shows increased fluorescence when binding to amyloid fibrils and is frequently used for the detection of amyloid fibrils (Culver et al., 2010). Initially, ThT was dissolved in 50% ethanol to 1 mg/mL and stored at 4 °C. For live cell imaging, cells treated with A β fibrils were incubated with ThT at 10 μ g/mL in DMEM (ATCC® 30-200™) cell culture media for 30 min at 37 °C and examined via live cell fluorescence imaging. The cellular accumulation of ThT was assessed using Nikon's NIS-Elements fluorescence microscope (Nikon, Tokyo, Japan) and images were processed and analyzed with ImageJ digital image processing (USA).

Study populations

Statistic methods

Equipment & materials

Analytic methods

Software used

In-Depth Review

Results

RESULTS

Aβ42 fibrils detection using Thioflavin T staining

We had previously reported on the Aβ inhibition and disaggregation assay of selected compounds by using Thioflavin T fluorescence assay (Cheng et al., 2017). Thioflavin T (ThT) is a small molecule that binds strong fluorescence upon binding to amyloids (Lee et al., 2017). Here, we showed that ThT also works as a dye to detect the Aβ42 fibrils (green fluorescence) in the neuronal cells treated with Aβ42 fibrils for 24 h (Fig. 2B). While for untreated cells (without the Aβ42), we could not see any fluorescence dye being emitted, which confirmed the absence of the fibrils (Fig. 2B). We demonstrated that the prepared fibrils were taken up by the cells to cause upon disruption.

Aβ42 fibrils detection by immunofluorescence

Immunofluorescence analysis demonstrated specific staining of Aβ42 fibrils (Fig. 2B) on SH-SY5Y cells. No staining was observed in SH-SY5Y cells in the absence of the Aβ42 fibrils (Fig. 2B, negative control (NC)).

Microarray analysis

Altered gene expression profiles in multiple comparisons between AD and treatment groups

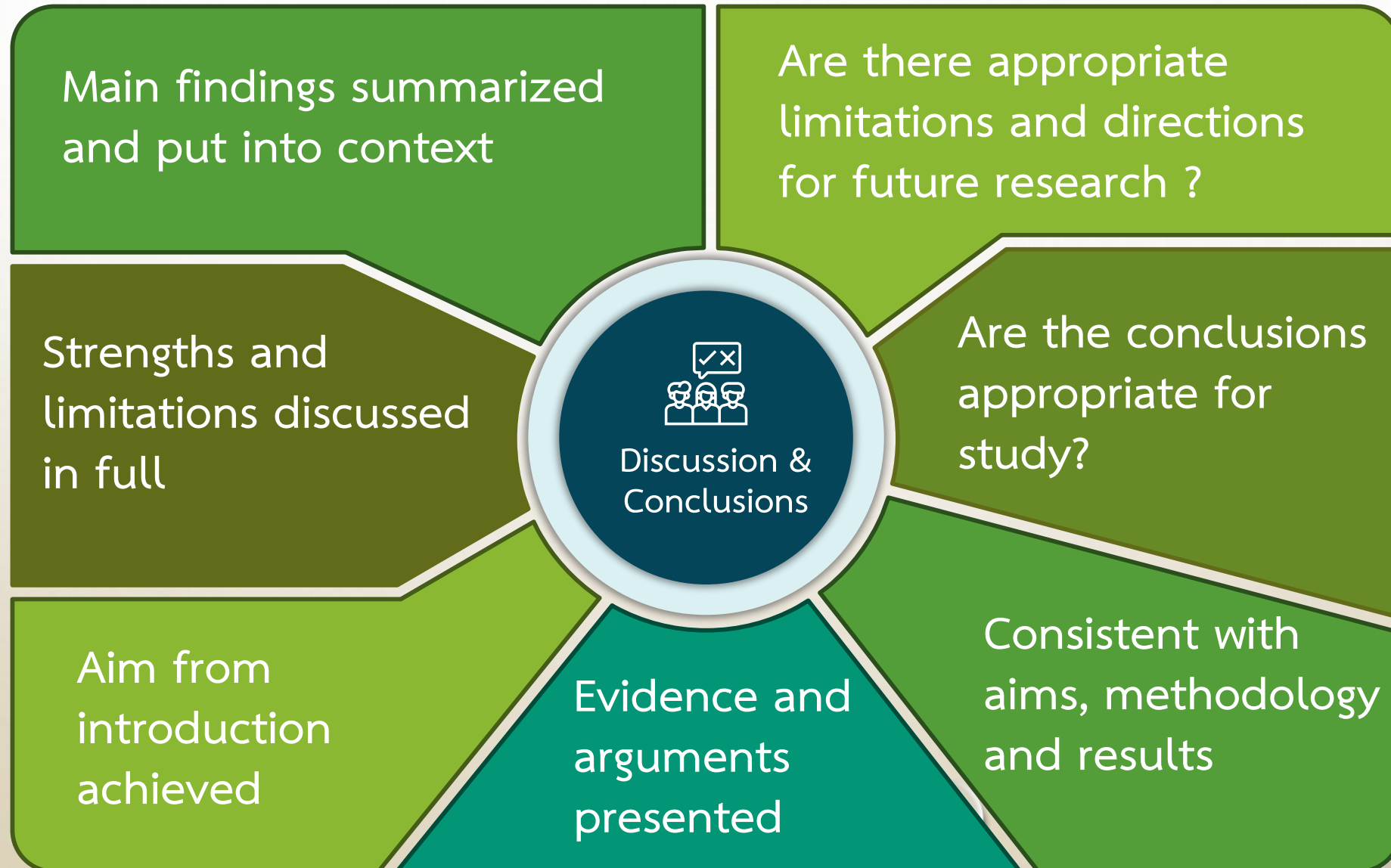
We obtained gene expression profiles using the Affymetrix Expression Console and Transcriptome Analysis Console (TAC) software from multiple comparisons between four

Any missing results

Consistent with tables



Discussion & Conclusions



No signs of **data** or
image manipulation

Ethical issues



Informed consent
from study
participants

Ethical approval
obtained if
necessary

Anonymization



Providing Feedback

```
graph LR; A((Providing Feedback)) --> B(Fit the aims and scope of the journal?); A --> C(comment on novelty or solely on soundness of science); A --> D(Give clear comments to editor and author); A --> E(Be objective, specific and constructive); A --> F(Be ready to make recommendations); A --> G(Be clear about what needs to be added, removed or revised); A --> H(Flag any areas you were unable to comment on);
```

Fit the aims and scope of the journal?

comment on novelty or solely on soundness of science

Give clear comments to editor and author

Be objective, specific and constructive

Be ready to make recommendations

Be clear about what needs to be added, removed or revised

Flag any areas you were unable to comment on

Peer review resources

- <https://www.humanrelationsjournal.org/journal/guidance-for-reviewers/>
- How to review articles (PDF guide and videos)
- COPE Ethical Guidelines: <https://publicationethics.org/guidance/Guidelines>
- <https://publons.com/journal/329211/academy-review/>
- Open Peer Review and preprint comments: https://subjectguides.york.ac.uk/openresearch/preprints_publication
- Web of Science Academy: <https://webofscienceacademy.clarivate.com/learn>
- PLOS Peer Review Center (<https://plos.org/resources/for-reviewers/>)

Summary



References

- The Collaborative Institutional Training Initiative (CITI Program)
- <https://www.elsevier.com/reviewers/what-is-peer-review>
- [2015 survey by the Publishing Research Consortium](#)
- <https://violentmetaphors.com/2013/12/13/how-to-become-good-at-peer-review-a-guide-for-young-scientists/>
- World Health Organization. (2011). Standards and operational guidance for ethics review of health-related research with human participants. World Health Organization. <https://apps.who.int/iris/handle/10665/44783>
- COPE: [Ethical guidelines for peer reviewers](#)