## Npof.

**Decision** 

Date: 14 March 2022 Ref.: 3.2-21/0096

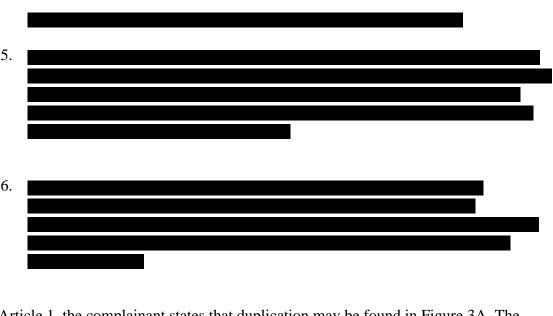
not guilty of research misconduct.

### **Decision on research misconduct**

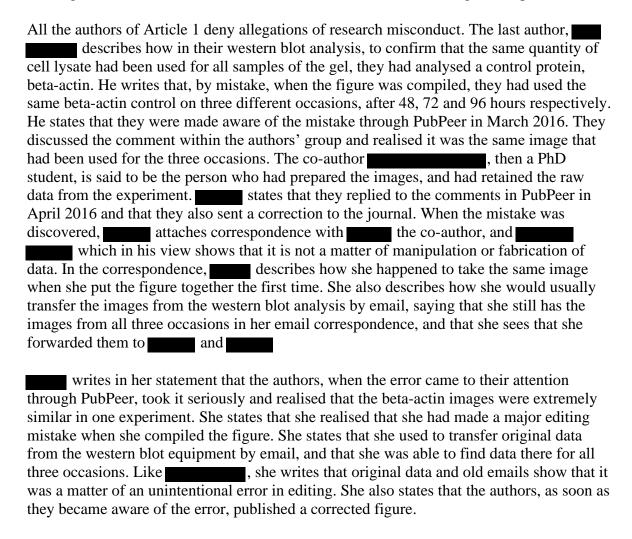
and

# **Background** On 10 August 2021 an anonymous allegation of research misconduct was received by the Board. The complainant refers to PubPeer and states that two articles, Articles 1 and 2 below, contain duplicated images. The complainant states that reuse of illustrations occurs in more of the authors' publications and lists another four articles, Articles 3–6 below. 1.

The Swedish National Board for Assessment of Research Misconduct ("the Board") finds



For Article 1, the complainant states that duplication may be found in Figure 3A. The suspicion concerns the use of the same western blot panel in Figure 3A to show the expression of the control protein on three separate occasions. Articles 2–6 are not being investigated; see below in this Decision for details, under the heading Prescription.



and say in their statements that they think the image duplication in Figure 3A occurred by mistake when the figure was compiled; that the author group discussed the error when they became aware of it; and that a correction was sent to the journal. replies that she was mainly involved in the project at an early stage.

The Board obtained an expert statement on the subject. Regarding Article 1, the expert¹ states that it is clear that the article contains duplicated results in Figure 3A, consisting in reuse of beta-actin control panels. The expert writes that he sees no signs of similar duplications in Figure 3A or in other figures in the article. He states that he had not read the raw data files, but that he considers that the panels have clearly not affected the conclusions from the results in the article. He thinks the documented email correspondence among the authors regarding the comments in PubPeer in 2016 supports the authors' statements that the duplication was an unintentional error, and that he finds no indication of deliberate falsification of data in Article 1. He also states that the authors, long before the allegation in question was reported to the Board, became aware of the error, and that the journal has published a corrected figure with an appropriate explanation.

#### **Grounds for decision**

#### Legal regulation

The Board's remit is to examine issues of research misconduct under the Swedish Act (2019:504) on responsibility for good research practice and the examination of research misconduct ("the Act"). Section 2 of the Act defines research misconduct as a serious deviation from good research practice in the form of fabrication, falsification or plagiarism, committed with intent or through gross negligence, in the planning, conduct or reporting of research.

#### **Statutory limitation**

Section 8 of the Act states that investigation of research misconduct may not be based on circumstances predating the beginning of the case by more than ten years. The provision in the first paragraph does not apply if there are special reasons for such investigation. The preparatory legislative work on the Act shows that special reasons may be that the alleged misconduct has had, or risks having, major or serious repercussions on the research or the wider society, such as on people's health, or on how processes, methods or products are designed.<sup>2</sup>

The allegation concerns four articles, Articles 3–6, that were more than ten years old when the case commenced. The Board's assessment is that there are no special reasons to depart from the period of statutory limitation, and has therefore not examined the suspicions relating to these articles.

<sup>&</sup>lt;sup>1</sup> Mikael Nilsson, Professor, Sahlgrenska Center for Cancer Research.

<sup>&</sup>lt;sup>2</sup> Swedish Government Bill 2018/19:58, p. 72.

Articles 1 and 2 were both published in 2013 and, accordingly, are not subject to statutory limitation. Article 2 is part of a case that was previously examined by the Board (reference number 3.1-21/0076). The assessment in that case was that the authors were not guilty of research misconduct. The article that is to be investigated is therefore Article 1.

#### Fabrication, falsification or plagiarism

The forms of misconduct the Board is tasked to examine are fabrication, falsification and plagiarism, These concepts are not defined by the Act, but the preparatory legislative work on it refers to the fact that they are described in codes (codices) and guidelines on research ethics, such as *The European Code of Conduct for Research Integrity*. They are also explained in the Swedish Research Council's publication *Good Research Practice*. According to the preparatory legislative work, "fabrication" is often described as inventing results and documenting them as if they were genuine. "Falsification" refers to manipulation of research material, equipment or processes, or alteration, omission or suppression of data or results without justification. Finally, the description of plagiarism is a researcher's use of other people's texts, ideas or work without due acknowledgement of the original source. 6

The investigation shows that the same beta-actin control was used to show results on three different occasions in Figure 3A in Article 1. This reuse constitutes falsification according to the definitions above.

#### Serious breach

Only serious breaches of good research practice constitute research misconduct and fall within the scope of investigation by the Board. Other breaches are, instead, dealt with by the entities responsible for the research (the higher education institutions), pursuant to Chapter 1, Section 17 of the Swedish Higher Education Ordinance (1993:100). It is stated in the preparatory legislative work on the Act that fabrication and falsification are always, in principle, severe breaches of good research practice. In certain cases, for example concerning a minor infraction on a single occasion, plagiarism should not be considered a serious breach of good research practice.<sup>7</sup>

The premise for the Board's investigation of this aspect is that falsification is, in principle, a serious breach from good research practice. The fact that reuse of images has not influenced the research results, or has done so only to a small extent, does not in the Board's opinion affect its assessment of the seriousness of the offence. The Board's conclusion is therefore that the deviations are serious.

#### Intent or gross negligence

Under Section 2 of the Act, the serious breach of good research practice must have been committed with intent or through gross negligence to be considered research misconduct. "Intent" means, according to the preparatory legislative work on the Act, that the

<sup>&</sup>lt;sup>3</sup> The European Code of Conduct for Research Integrity, revised edition. Berlin: All European Academies (ALLEA); 2018, section 3.1.

<sup>&</sup>lt;sup>4</sup> Swedish Government Bill 2018/19:58, pp. 45, 100.

<sup>&</sup>lt;sup>5</sup> Good Research Practice. Stockholm: Swedish Research Council;, 2017, Chapter 8.

<sup>&</sup>lt;sup>6</sup> Swedish Government Bill 2018/19:58, pp. 45, 100.

<sup>&</sup>lt;sup>7</sup> Swedish Government Bill 2018/19:58, p. 100.

researcher understands what (s)he has done, while "negligence" means that the researcher should have understood this in any case. "Gross negligence" requires the conduct to stand out as particularly serious or reprehensible. Oversights, carelessness or misunderstanding should not, as a rule, be regarded as gross negligence according to the preparatory legislative work.<sup>8</sup>

Since 1 January 2020, researchers' responsibility to follow good research practice in their research has been subject to statutory regulation under Section 4. There must be investigation and assessment of how far-reaching this responsibility may or should be in each individual case.

The expert's assessment is that there is every indication that the reuse of images in the article took place by mistake. The Board has reached the same assessment, and finds that no evidence has emerged in the case that would support the opinion that the reuse of images in Article 1 took place intentionally. Since the only error involved is a single, isolated one, the Board considers that there is no reason to consider that the authors acted with gross negligence either. It has emerged that the authors were alerted to the error through PubPeer and thereafter published an erratum in the journal. The Board, like the expert, notes that this erratum was published several years before the recent allegation to the Board.

The Board therefore finds that	at	
	and	are not
guilty of research misconduc	t.	
The Board has decided in thi	s case following its presentation by cases	vorker Dorota Green
Catarina Barketorp	Dorota Green	
Chair	Caseworker	

<sup>&</sup>lt;sup>8</sup> Swedish Government Bill 2018/19:58, pp. 50–51, 100.