

Concerns about the dissertation of L. Schneider (2008) and Schneider et al., J Biol Chem 2007

18 October 2026

To: Prof. Dr. Eckart Zimmermann and Dr. Verena Zimorski, Ombudspersons for Good Scientific Practice, Mathematisch-Naturwissenschaftliche Fakultät, Heinrich-Heine-Universität Düsseldorf, Universitätsstraße 1, 40225 Düsseldorf, Germany

Re: Leonid Schneider, *Die Bedeutung von TACC3, eines Proteins der mitotischen Spindel, für die zelluläre Proliferation und Viabilität*. Inaugural-Dissertation, Mathematisch-Naturwissenschaftliche Fakultät, Heinrich-Heine-Universität Düsseldorf, 2008; from the Institut für Biochemie und Molekularbiologie II. Referent: Prof. Dr. Dr. B. Nürnberg; Koreferent: Prof. Dr. P. Westhoff; oral examination 18 June 2008. And the article reporting the same work: Schneider L, Essmann F, Kletke A, Rio P, Hanenberg H, Wetzel W, Schulze-Osthoff K, Nürnberg B, Piekorz RP. *J Biol Chem* 2007;282(40):29273–29283. doi:10.1074/jbc.M704151200.

Dear Professor Zimmermann, dear Dr Zimorski,

I am submitting in writing, under the HHU rules on safeguarding good scientific practice, concerns about a dissertation accepted by your Faculty and about the article that reports the same work. Prof. Nürnberg (Referent) and Prof. Dr. Roland P. Piekorz of the Institut für Biochemie und Molekularbiologie II are co-authors of the article.

Chapter 5.3 of the dissertation (Figs. 22–32) reports the same HeLa and HCT116 experiments as the article, plotted from the same values. I compared the two documents figure by figure and recomputed the statistics from the plotted values. The comparison shows that:

- identical data carry different significance claims in the two documents;
- p-values in both documents cannot be reproduced from their own figures;
- the article omits a confound that the dissertation states, and rounds up or withholds results that the dissertation reports;
- data published in the article's supplement have no counterpart in the dissertation;
- the dissertation contradicts itself on methods, and the version printed with the Faculty's approval lacks a methods figure.

I am not in a position to determine how these discrepancies arose. That is the purpose of the procedure under your rules, and I ask that they be examined. Each finding below gives the dissertation's printed page number and the article's figure number, so that it can be

verified independently. Values marked as recomputed were read from the published figures and tested with the method both documents state: Student's t-test on means $\pm$ S.D. (Diss. Section 4.14, p. 45).

Findings

1. Identical data, different significance claims (Diss. Fig. 25B; JBC Fig. 2B). Both figures plot the same cyclin B1-positive fractions after nocodazole release, with the same means and error bars. The dissertation marks the 0 h comparison with * ($p < 0.05$) (p. 64). The article, published six months earlier, shows the identical points without that mark, while keeping ** at 2 h and * at 4 h. Both legends define the asterisks as p-value thresholds (* $p < 0.05$; ** $p < 0.005$). Recomputed from the plotted values ($56.5 \pm 2.3\%$ vs $45.0 \pm 10.5\%$), the 0 h comparison gives $p = 0.14$ with three experiments and 0.08 with four, so the claim in the dissertation is unsupported. A PubPeer comment on the article states that "experiments are the same but p values are different in thesis and publication"; this figure is one such case.

2. p-values in both documents cannot be reproduced from their own figures. The same values appear in the dissertation and the article, so they are not transcription errors introduced at publication.

Dissertation figure (JBC equivalent)	Reported	Recomputed from plotted values
Fig. 30B (Fig. 6B), sub-G1, wild-type vs Mad2+/-	$p = 0.021$, $n = 4$	0.057 (Welch: 0.075)
Fig. 31B (Suppl. 4S B), >2 centrosomes / multinucleation	$p = 0.005 / 0.01$, $n = 3$	0.012 / 0.0025; the values appear swapped
Fig. 22B (Fig. 7B), p53-/- vs p21-/-	$p = 0.0003$, one experiment in triplicate	about 4×10^{-7} ; technical replicates only
Fig. 25B (Fig. 2B), cyclin B1+ at 2 h and 4 h	** at 2 h, * at 4 h	the 4 h difference is 4-10 times more significant than the 2 h difference, for any n
Fig. 27B (Fig. 3B), day 1	$p < 0.0005$, n not stated	about 0.001 with three experiments; about 0.02 by Fisher's exact test on pooled counts

Fig. 30B is the only evidence for the article's central claim that cell death depends on the spindle checkpoint.

3. A confound stated in the dissertation was omitted from the article (Diss. p. 62; JBC Fig. 7). The dissertation states that "p21WAF deficient HCT116 cells already displayed elevated p53 levels (Fig. 22C) and are therefore particularly prone to p53-induced apoptosis upon cellular stress." The article omits this and concludes that p21 "exerts an anti-apoptotic role" and that cell death is "highly exacerbated" by p21 deficiency.

4. Results rounded up or withheld in the article.

- **Mitotic index:** $8.8 \pm 3.0\%$ vs $2.6 \pm 0.4\%$ in the dissertation (pp. 63–64), a 3.4-fold difference with no n and no test; "a 4-fold increase" with "data not shown" in the article.
- **HeLa p53/p21:** shown as an immunoblot in the dissertation (Fig. 23, p. 62); "data not shown" in the article.
- **Live-cell imaging:** the dissertation states that knockdown cells "failed to enter anaphase during an observation period of up to 20 hours" (p. 66). Its Fig. 26C contains 7 knockdown cells, of which three left mitosis at about 5, 9 and 10 h and only one was followed in mitosis for about 19 h.
- **Multinucleation:** 2.2- and 7.6-fold increases from "two independent experiments", with no test (p. 75); "data not shown" in the article.

5. Published data with no counterpart in the dissertation. The annexin V/7-AAD and micronucleus results in the article's supplement (Suppl. Figs. 2S and 3S, published October 2007, with $p < 0.005$ and $p < 0.05$ marks) appear nowhere in the dissertation submitted in April 2008. The word "micronuclei" does not occur, and annexin V is mentioned only for NIH3T3 cells (p. 87). The experimental basis of these published results should be documented.

6. The dissertation contradicts itself on methods.

- **Centrosome marker:** "γ-tubulin/DAPI staining" in Methods 4.8 (p. 41); pericentrin in the Fig. 31B legend (p. 74); α-tubulin in the article's Suppl. Fig. 4S legend. The same values ($23.4 \pm 6.3\%$ vs $4.6 \pm 4.1\%$) are attributed to three different stains.
- **HCT116 system:** DOX-inducible lines made with tTR-KRAB in Methods 4.5 (p. 37); cells analysed "five days after transduction" in the Fig. 22 legend (p. 61); "day five of DOX treatment" in the text for the same experiment; "day 4 of DOX treatment" in Fig. 30. Wild-type sub-G1 after knockdown is 16% in Fig. 30 but 62% in Fig. 22.
- **Labels and citations:** Fig. 28A labels the CREST channel "Centrosomes" (CREST stains centromeres). The Discussion cites Fig. 27 for data that are in Fig. 28 (p. 88), and Fig. 28 is missing from the list of figures.

7. Figures in the approved dissertation.

- **Fig. 10 (p. 36)** is captioned "Schematic structure of the retroviral expression vector S11IP", and its legend describes the promoter, IRES and puromycin cassette. The image above it is a hand-drawn cartoon titled "The Professor and his student: The bestowing of PhD". The map of the construct used to make the HCT116 and MCF7 lines DOX-inducible is therefore missing from the version printed with the Faculty's approval (title page: "Gedruckt mit der Genehmigung der Mathematisch-Naturwissenschaftlichen Fakultät").
- **Fig. 23 (p. 62), lower β -actin strip:** the loading control for the HeLa p21 blot. Two straight vertical dark lines bracket lane 6 (TACC3 siRNA, day 2), from the top edge of the strip down to the band. No corresponding feature appears in the other strips. Only the original film can establish whether these are film artefacts or the edges of an inserted region.

8. Incorrect mechanistic statements. HeLa cells are said to "lack the G1-checkpoint Retinoblastoma (Rb) protein" through E7-mediated "suppression of Rb gene expression" (p. 62); E7 binds and inactivates Rb and promotes its degradation. Mitotic death is declared "obviously not a post-mitotic event" (p. 72), although Fig. 26C shows cells leaving mitosis. Mad2+/- cells are said to lack "a functional spindle checkpoint" (p. 72), which the cited source does not report. Spindle-checkpoint activation, the article's central mechanism, is described in the dissertation only as "likely" (p. 90).

Requests

These are not isolated presentation errors. A dissertation approved by the Faculty and a peer-reviewed article make different statistical claims about the same data. Both rest key conclusions on p-values that their own figures do not support. In the approved version, a methods figure shows an unrelated drawing instead of the vector map its caption describes. The discrepancy between the two documents has already been raised publicly, and only the primary records can resolve it.

I therefore ask that you:

1. carry out a preliminary examination of the points above under the HHU rules;
2. ensure that the primary records for the HeLa and HCT116 experiments in Chapter 5.3 are identified and secured, to the extent they still exist: immunoblot films, flow-cytometry files, microscopy files and laboratory notebooks;
3. forward to the competent bodies of the Faculty those matters that concern the doctoral procedure, as those rules provide;
4. confirm receipt of this report and inform me of the outcome of the preliminary examination.

I can provide my figure measurements and calculations on request, and I am available to answer questions.

Yours sincerely,

Links

- Dissertation: [Heinrich-Heine-Universität Düsseldorf repository](#)
- Article and Supplementary Information: <https://doi.org/10.1074/jbc.M704151200>
- PubPeer thread:
<https://pubpeer.com/publications/93EFCC7F396E926F37ADA5B69AB101>
- HHU rules on good scientific practice (2020): [GWP-Ordnung](#)