

Inquiry into allegations of scientific misconduct by the laboratory of Dr. Hari Koul Final Report

Inquiry Committee:

Based on the evidence presented to her, Dr. Sandra Roerig determined that an Inquiry Committee was needed to determine whether sufficient evidence of scientific misconduct existed to justify a formal investigation of the allegations brought against the laboratory of Dr. Hari Koul. The committee's makeup, approved by Dr. Koul, was as follows:

Kevin McCarthy, Ph.D., Professor, Department of Pathology; Professor Cell Biology and Anatomy; Committee Chair (in nomino)

Robert Chervenak, Ph.D., Professor, Department of Microbiology and Immunology

Norman Harris, Ph.D., Professor, Molecular and Cellular Physiology

The first meeting of the Inquiry Committee was held on June 23, at which time Dr. Roerig presented the Committee with its formal charge.

1. NATURE OF ALLEGATIONS

Dr. Mintu Pal, in an email to Dr Hari Koul dated May 14, 2014, informed Dr Hari Koul that Dr Pal had made some errors while compiling figures for a poster in preparation for the annual Barlow symposium. Subsequently, Dr. Pal sent Dr. Koul a corrected set of figures. Dr. Koul reported a potential problem in the manuscript listed directly below (A) to Dr Wang (editor, Journal of Biological Chemistry) with Drs. Roerig, Pal and Ms. Sweaty Koul cc'd on 5/16/14.

- A. Mintu Pal, Sweaty Koul, and Hari K. Koul (2013). The transcription factor sterile alpha motif (SAM) pointed domain-containing ETS transcription factor (SPDEF) is required for E-cadherin expression in prostate cancer cells. *J. Biol. Chem* 28 (17) 12222-31 (manuscript has been retracted by PI).

Specific Issues/Allegations:

- Reuse of GAPDH bands from supposedly different blots (Fig 1C lanes 1-6 and Fig 2C lanes 1-6).
- Numerous cases of both reuse and misrepresentation of images (Figs 6A, 6C, 7, 8A and 8C).

From the time the initial report had been made by Dr Koul and the statement that follows, there were a series of communications that transpired between Drs. Koul, Pal, Roerig, and Valdez (Manager of Publication Ethics, ASCBMB) outlining a course of action to address the concerns raised by Dr. Koul. These communications are appended to the present report.

On June 2, 2014, an anonymous whistleblower using the name Procancerresearch contacted Dr. Roerig by email and expressed concern over possible scientific misconduct involving the publication (A, listed above) and two additional publications from the Koul laboratory. These two are listed below:

- B. Adballa Ali Deb, Shandra S Wilson, Kyle O Rove, Binod Kumar, Sweaty Koul, Douglas D. Lim, Randall B. Meacham, and Hari K Koul (2011). Potentiation of mitomycin C tumoricidal activity for the transitional cell carcinoma by histone deacetylase inhibitors *in vitro*. *J. Urol* 186(6): 2426-33.

Specific Issues/Allegations:

- Beta actin bands “flipped” and reused (Figs 4C and 5B).
- Possible pasting of experimental bands into figures (Figs 4c and 5b).

- C. Lakshmipathi Khandrika, Sweaty Koul, Randall B. Mechham, Hari K. Koul (2012). Kidney injury molecule-1 is upregulated in renal epithelial cells in response to oxalate *in vitro* and in renal tissues in response to hyperoxaluria *in vivo*. *PLoS One* 7(9): e44174.

Specific Issues/Allegations:

- Possible pasting of bands in blot (Fig 3b).

During the course of the inquiry, the committee members were informed by Dr. Sandra Roerig of an online discussion forum called PubPeer (<https://pubpeer.com/about>). Her knowledge of the forum and its content (with regard to the Koul manuscripts) is based on an email from an anonymous whistleblower (Procancerresearch, see above). The initial communication is included in the string of email correspondence which will be made available from Institutional Research Integrity Official (Dr. Sandra Roerig), either as an appendix to this report or, for the sake of minimizing the overall length of this document, will be made available to those authorized to view these particular documents upon request

The PubPeer forum is a voluntary peer-based discussion about the interpretation/quality of data that has been published in the literature (http://blog.pubpeer.com/?p=164&utm_source=rss&utm_medium=rss&utm_campaign=a-crisis-of-trust).

Surprisingly, upon reviewing the content of the discussion forum, the members of the Inquiry Committee found a total of eight manuscripts from the Koul laboratory that were actively being discussed in the context of data irregularity, the discussants on the site suggesting that some of these irregularities may have crossed the line into the area of possible scientific misconduct. The committee reviewed each of these manuscripts and the allegations noted on PubPeer as part of this inquiry. In addition to the three articles listed above in section 1, the other five articles are as follows:

- D. Binod Kumar, Sweaty Koul, Jane Petersen, Lakshmipathi Khandrika, Jeong S Hwa, Randall B Meacham, Shandra Wilson, Hari K Koul (2010). p38 mitogen-activated protein kinase-driven MAPKAPK2 regulates invasion of bladder cancer by modulation of MMP-2 and MMP-9 activity. *Cancer Res.* 70(2):832-41.

Specific Issues/Allegations:

- Reuse and misidentification of microscopy images (Fig 2D and Fig 6B).

- E. Seok-Soo Byun, Fernando J Kim, Lakshmipathi Khandrika, Binod Kumar, Sweaty Koul, Shandra Wilson, Hari K Koul (2009). Differential effects of valproic acid on growth, proliferation and metastasis in HTB5 and HTB9 bladder cancer cell lines. *Cancer Lett.* 281: 196-202.

Specific Issues/Allegations:

- Bands on blot obscured or removed, apparent when the images are enhanced (Fig 4A p21 band "C" at 24hr, Fig 4B p21 band "C" at 24hr, and Fig 4B Cyclin A band "10" at 48 hr).

- F. Thomas R Johnson, Sweaty Koul, Binod Kumar, Lakshmipathi Khandrika, Sarah Venezia, Paul D Maroni, Randall B Meacham, Hari K Koul (2010). Loss of PDEF, a prostate-derived Ets factor is associated with aggressive phenotype of prostate cancer: regulation of MMP 9 by PDEF. *Mol. Cancer* 9:148.

Specific Issues/Allegations:

- Reuse of figure from a previous publication (Fig 4D first 4 bars and images appear identical to Fig 5E, Johnson, et al, *Mol. Cancer Res.*, 2008;6:1639-1648).
- Reuse of data from a previous publication (Fig 4D last 2 bars and images appear to be identical to Fig 5F 1st and last bars from Johnson et al.
- Misrepresentation of data. In the present publication, the images above the last 2 bars are identified as PC3 cells whereas in the prior publication the same images in Fig 5F above the first and 4th bars are identified as DU145 cells.

- G. Lakshmipathi Khandrika, Fernando J Kim, Adriano Campagna, Sweaty Koul, Randall B Meacham, Hari K Koul (2008). Primary culture and characterization of human renal inner medullary collecting duct epithelial cells. *J. Urol.* 179(5): 2057-2063.

Specific Issues/Allegations:

- Misrepresentation of data. None of the "enlargements" are of the fields purported (Figs 2 and 6A).

- H. Joshua J Steffan, Sweaty Koul, Randall B Meacham, Hari K Koul (2012). The transcription factor SPDEF suppresses prostate tumor metastasis. *J. Biol. Chem.* 287: 29968-29978.

Specific Issues/Allegations:

- GAPDH bands appear to be reused in different blots (Figs 4B, 5F and 6).

It should be noted that the data that was posted and being discussed in the PubPeer forum were excerpted directly from **THE ORIGINAL PUBLISHED FILES THAT are AVAILABLE ONLINE FROM THE RESPECTIVE JOURNAL WEBSITES.**

It should be also noted that **NEITHER THE FORUM PARTICIPANTS NOR THE FORUM ITSELF HAD ACCESS TO THE ORIGINAL RAW DATA FILES THAT HAD BEEN GENERATED BY THE KOUL LABORATORY.**

2. PHS AND OTHER FINANCIAL SUPPORT (By article)

- A. NIH RO1 DK54084; RO1 CA161880; VA Merit Award BX001258, University of Colorado
- B. None-Funding provided by University of Colorado School of Medicine and Novartis
- C. NIH RO1 DK54084

- D. None-Funding provided by The University of Colorado School of Medicine and Department of Surgery and Academic Enrichment Funds.
- E. None-Funding provided by The University of Colorado School of Medicine and Department of Surgery and Academic Enrichment Funds.
- F. NIH/NCI-P20 CA103680-Schwartz/Byers Program PI's (H Koul, Pilot-Project PI) and the (Colorado) Department of Surgery, School of Medicine Academic Enrichment Funds.
- G. NIH R01 DK54084 and the University of Colorado at Denver Health Sciences Center School of Medicine and Department of Surgery Academic Enrichment Funds.
- H. VA Merit Award 01BX001258, NIH R01 DK54084, and NIH/NCI R01 CA161880, University of Colorado.

3. MEETING WITH RESPONDENTS

Separate meetings with the respondents, Mintu Pal, Ph.D. and Hari K. Koul, Ph.D., and the Inquiry Committee were scheduled by Dr. Sandra Roerig, for 7/14/14 (MP) and 7/17/14 (HKK). Individuals present at meeting included the Inquiry Committee Members, Dr. Sandra Roerig, and one of the Respondents. Dr. Roerig's role in the meeting was as a witness and recorder of the meeting proceedings. Dr. Roerig did not participate in any of the questioning of the Respondents.

4. MEETING WITH WHISTLEBLOWER

The report of misconduct was made via email from an anonymous individual having the name "Procancerresearch". Procancerresearch contacted Dr. Sandra Roerig via an off-campus G-mail account. No attempt was made to discern the identity of the Whistleblower.

The method of contact between Dr. Roerig and Procancerresearch was via weekly email notifications of postings of comments to a searchable website PubPeer (<https://pubpeer.com>). Appended is a PubPeer dialogue with regard to Manuscript A (listed above) posted by several individuals. Also appended are the supporting images referenced in the narrative. It should be noted that detailed information regarding the allegations involving each of the above noted manuscripts from the Koul laboratory are available online at the PubPeer website.

5. COMMITTEE PROCEDURES

Prior to meeting with the respondents, the Inquiry Committee membership compiled a list of questions to ask each Respondent (see Appendix). During the meeting proceedings, the Respondents were made aware of the fact that the list of questions that were being asked of the Respondents were arrived at by consensus of the Inquiry Committee membership.

The meeting procedure followed simple protocol. Once the group was assembled, the intent of the meeting was outlined to each respective Respondent. At that point, one member of the Inquiry Committee started off the question/answer session following the list of questions assembled for each Respondent. The Respondent was allowed to reply to each question and given the option to elaborate/divulge any additional information that pertained to the question. In turn, subsequent additional questions, based on the Respondent's answers, were asked by any member of the Committee and the Respondent given the opportunity to answer the question. Once that respective area was exhausted, the Committee would move to the next question. If, during the course of an earlier time in discussion the Respondent had answered a question that appeared later on the list, that particular question was skipped. At the end of the Q/A session, the Respondents were thanked for their time and candor in their replies, and the meeting adjourned.

6. MINTU PAL, Ph.D. TRANSCRIPT SUMMARY

For this session, Dr. Robert Chervenak first outlined to Dr. Pal the purpose of our meeting and informed him that he had the right to have legal counsel present if he chose. Dr Pal understood the statement and opted to proceed without counsel. The first round of questions focused on allowing Dr. Pal to tell the Committee his version of how he discovered that there was a problem with the paper (Section 1, Paper A). Dr. McCarthy then proceeded to ask questions from the list shown below in Appendix 1. During this first round of questions, Dr. Pal established that he become aware of the error in the second week of May, while he was preparing a poster for the Barlow Symposium. He indicated that once he realized that an error had been made, he immediately contacted the PI of the laboratory, Dr Koul.

In a follow-up series of Q/A, Dr. Pal indicated that while he was using Powerpoint to compile a figure for the poster, he discovered the errors with regard to the use of duplicate images in a micrograph plate. When he was asked how do you think the errors occurred, he indicated that the images were so small had been made. He alleged that the errors were due to the fact that he had "copied the images from the original images and put into the power point slides in small sizes" (his words). From the committee's

perspective/interpretation of Dr. Pal's explanation, it appeared to the committee that during the process of the assembly of the figures, a series of "cut and paste" errors had been made by Dr. Pal.

Dr. Chervenak asked Dr. Pal to better clarify/explain to the Committee how he committed the error of using duplicate images, citing the fact that the entire set of micrographs (Appendix Figure 6A, 6C, and Figure 8A) were based on two data micrographs, when it was discovered that all of the micrographs in the figures were actually derived from one photograph, that was "frameshifted" from picture to picture in the panel. When asked again how he thought such an error could have happened, Dr. Pal once again offered the same explanation as listed in the previous paragraph.

Subsequently Dr. Harris asked Dr. Pal if his file names on the raw images indicated the conditions and cell lines that were used to make the photograph and Dr. Pal indicated that is how they images were labeled. Dr. Chervenak asked if the error was due to the fact that the wrong images were labeled during the save of the original data. Dr. Pal indicated that the pictures had been labeled properly. Dr. Chervenak expressed his concern that Dr Pal's explanation as to how the errors occurred did not correlate with the fact that the images had been properly labeled. Dr. McCarthy expressed the concern that within the panels in the JBC paper, some of the duplicate images had been "frameshifted"-i.e. to give the micrograph a different appearance to the casual viewer. Again Dr. Pal was asked how this type of error could have happened, and his explanation was somewhat nebulous.

At that point, the Committee elected to move on to other questions. Dr. Pal was asked who was involved in making the figures. Dr. Pal indicated that he was the only person who worked on the figures. He was then asked who did the experiments that produced the data. Dr. Pal indicated that he was the person who did the experiments and produced the data. When asked who reviewed the figures prior to submission, Dr. Pal indicated that he passed the figures on to Dr. Koul for review prior to submission. Dr. Pal also indicated that Sweaty Koul had no direct role in the experiments, no preparing the paper, nor assembling the figures.

The next set of questions asked Dr. Pal what he know of PubPeer, which appears to be the forum by which the Whistleblower, Procancerresearch, used to illustrate the discrepancies in the JBC paper (Section 1, Paper A). When asked about his knowledge of PubPeer, Dr Pal said he knew nothing about PubPeer nor had he ever visited the PubPeer website. He was then asked if anyone outside the institution had contacted him about the paper and its irregularities, and he said no. Dr Pal indicated that the only people he had discussed the discrepancies with were Dr. Koul and Dr Roerig (in the presence of Dr. Koul). He did not discuss the issue with Sweaty Koul or anyone else in the laboratory. Dr Pal was subsequently asked a series of questions that led to a final answer that he was the only person from Denver who came with the Kouls to LSUHSC-S.

Dr. Pal was asked by Dr. Chervenak about issues with other figures in the paper (Figure 1C, 2C) in which electrophoretic bands had been duplicated, and “cut and pasted” . Dr. Pal’s explanation as to why the bands were duplicated was somewhat confusing and nebulous. Dr. McCarthy asked if doing such a manipulation of bands was, at the very least, “sloppy science”. Further Q/A about this topic yielded similar nebulous/confusing answers.

When asked by Dr. Chervenak if he believed his own data, Dr. Pal answered yes, and proceeded to justify his statement. From his statement, the Committee members seemed to construe that as long as a band/micrograph appeared to represent the outcome of the experiment, it was okay to use in a figure according to Dr. Pal. When the Committee once again voiced their concern with regard to the explanation by Dr Pal as to how the errors occurred, Dr Pal maintained that the entire scenario could be easily explained by “cut and paste” errors.

The next set of questions focused on two areas; Bioethics and how Dr. Koul manages his research laboratory. When asked about whether or not he had had a course in Bioethics, Dr. Pal indicated that he had taken the course offered by the LSUHSC-S Office of Research. When asked if Dr. Koul ever sat down with him and discussed bioethics, his answers to the question pointed to the fact that Dr. Koul does not address this topic in his laboratory meetings. When asked if he knew of anyone else in the Koul laboratory who might have had issues with regard to misrepresenting research data, Dr. Pal’s answer was no.

In terms of how Dr. Koul manages his research laboratory, Dr Pal indicated that the laboratory met weekly as a group to present the data to Dr. Koul. When asked if Dr. Koul ever met with him privately to review raw data and numbers the answer was no. When asked if Dr. Koul ever looks at the data notebooks the answer was no. When asked if Dr. Koul ever checks the raw numbers that were used to produce a graph, Dr Pal said yes, but when pressed as to when this would happen, the answer Dr. Pal gave was somewhat nebulous.

At that point, the questioning was concluded, Dr. Pal was asked to make a final statement. After his closing statement, in which he sincerely apologized for the errors that occurred in the JBC paper (A), the Committee responded with several more questions, trying to once again discern the intent/nature of the mistakes found in the paper.

7. HARI KOUL, Ph.D. TRANSCRIPT SUMMARY

On July 17, 2014, Dr. Hari Koul met with the inquiry committee (Drs. Robert Chervenak, Kevin McCarthy, Norman Harris) with Dr. Sandy Roerig also in attendance. The

following is only a summary, and does not completely describe every part of the conversation.

Dr. Koul was advised that the inquiry was not to determine guilt or innocence or necessarily even to determine whether scientific misconduct has occurred but simply to determine whether there is sufficient evidence that scientific misconduct has occurred to warrant the inquiry moving on to a full investigation.

The interview began with Dr. Koul describing how he became aware of the problems with the J. Biol. Chem paper co-authored by Drs. Mintu Pal, Sweaty Koul, and Hari Koul. He indicated that he became aware of the problem in mid-May, and subsequently informed the associate director of the journal of the problem. After further correspondence with the chief director concerning the multiple manuscript figures involved, Dr. Koul retracted the manuscript since the journal policy was to allow a maximum of two corrections. Dr. Koul expressed puzzlement over how Dr. Pal was just now noticing the mistakes after presenting the data on at least four different occasions. He said that the dilemma that he was facing was whether this was Dr. Pal's incompetence or a deliberate action. Dr. Koul had asked Dr. Pal how the errors occurred, with the answer unclear, related to copying without uncopying, and the small size of the images.

Dr. Koul indicated that he meets with his lab as a whole once a week, if he is in town, and his lab members present their data. However, he has not been in the lab for the past twelve years, and does not typically have one-on-one conversations with his lab members. He indicated that he had not been meeting individually with Dr. Pal due to Dr. Pal's considerable previous research experience, and Dr. Koul felt that Dr. Pal did not need any more of Dr. Koul's "divine intervention". Dr. Koul stated that he had not had a one-on-one conversation with Dr. Pal during the spring.

The questioning then moved on to the website PubPeer, on which individuals are discussing potential misrepresentation of data on eight of Dr. Koul's recent manuscripts dating back to 2008. Dr. Koul indicated that he was aware of the website, and would like to look through his data and notes and make corrective actions if needed. He stated that he was confident that the amount of data that his lab had for those manuscripts far exceeds what was published. He again reiterated his confidence in the data, but stated that if there are problems, he doesn't know what to believe because he is not in the lab and doesn't know whether his lab is using the antibodies or samples they say they used. He suggested that the issues discussed on PubPeer have to be taken in the context of other pieces of data from the Koul lab.

The inquiry turned to another of the papers (J. Urology 2011), with Dr. Koul indicating that the first author (Dr. Abdalla) performed all the work and generated all the figures. Upon the question of the apparent intentional nature of the data misrepresentation in that manuscript, Dr. Koul stated that you should look at it in the context of the data, where you will figure out that they are not manipulated. He denied the cut-and-paste of the figures, saying that "they look similar", but "they are not similar". This was confusing to

the inquiry committee, as the gels in question were apparently identical, with two different gel images flipped horizontally and placed in separate figures. Upon this assertion, Dr. Koul changed his response by saying that the gel was indeed flipped, but "it is not what is perceived as (quote unquote) they took this and made it flip to look at it different" and "it doesn't make any difference in the conclusion". He then changed his statement again saying that they were not the same gels, but if they were the same, it doesn't make any difference in the conclusions. Dr. Koul indicated that he has not been contacted by PubPeer.

The conversation then turned to "Procancerresearch", the person who contacted Dr. Roerig about the potential scientific misconduct prior to the papers being discussed on PubPeer. Dr. Koul stated that he has not been contacted by Procancerresearch. The inquiry committee indicated that they do not know the identity of Procancerresearch. Dr. Koul stated his belief that Procancerresearch is someone here at LSUHSC-Shreveport rather than someone in his previous institution in Colorado, where the work was performed. He believes that a current disgruntled faculty member at our institution is trying to get revenge for some actions that Dr. Koul has taken against this faculty member.

The questioning turned to how the problems with so many manuscripts could have occurred. Dr. Koul stated that he needs to be more careful with the data that is provided to him. He doesn't help make the figures, or write the methods, but he helps explain what the results are. He indicated that he will now have a lab "monitor" look more carefully into the lab's data, as he himself doesn't have that time. He also mentioned pairing of lab members that would duplicate experiments to doublecheck the results.

The next question related to the level of pressure felt by the lab members to show productivity. Dr. Koul indicated that no such pressure existed and that papers sat on his desk for years before he published (as evidence that he was not pressuring his lab members).

Turning to the issue of Dr. Koul's role in the manuscripts, it was stated that Dr. Koul's lab members generate the data, organize the data, generate the figures, and write the first draft, with Dr. Koul's role being to edit the paper based on his own interpretations of the results. Dr. Koul stated that he does not micromanage the other aspects of the publishing process.

Dr. Koul was then questioned about his training of post-docs and students with regard to ethics. He indicated that his training was by example and reinforcing that data is supreme and let the data tell the story.

Dr. Koul was asked whether he has investigated the possible problems with all of the papers being discussed on PubPeer. He indicated that he has looked at three of them and doesn't know what to believe. He agreed that he is obligated to investigate the potential

problems with all eight papers, but indicated the difficulty of doing so, with all of his other obligations that take his time.

Dr. Koul was asked whether he bears responsibility for the large number of instances of apparent data misrepresentation. He responded that “large” is a relative term. He stated that he does bear responsibility in the end, but that he has to trust his lab. He indicated that some of the issues being discussed on PubPeer were trivial and some people have better things to do and don’t have axes to grind.

Dr. Koul was then asked if there was some way in which he has managed the lab to make them feel that this kind of behavior (data misrepresentation) is acceptable, with Dr. Koul’s answer indicating that this was not the case.

Additional comments made by Dr. Koul related to his practice of backing up data on servers. He again stated that he wasn’t sure there were additional problems with other manuscripts, and that sometimes the pixel resolution changed by the journal might make it look like there is a problem.

Dr. Koul was asked if he had any closing remarks, with his response related to his life and career path and the importance of character, and that if there have been intentional errors that he would be the first one to take the strongest action, against himself or a lab member.

SUMMARY AND RECOMMENDATIONS

A meeting of the Inquiry Committee was held on July 17, 2014, immediately following the interview with Dr. Koul. As per the charge of the Committee, no attempt was made to make a final determination as to whether scientific misconduct has occurred in this case or who the responsible parties might be. The Committee reviewed the testimony of the 2 witnesses as well as the records provided by the anonymous whistleblower (Procancerresearch) and the PubPeer website. Based on this information, the Committee voted unanimously that there is sufficient evidence of possible scientific misconduct originating from a party or parties associated with the Koul laboratory. Thus, the recommendation of this Committee is that a formal investigation be initiated immediately.

THE INQUIRY COMMITTEE WANTS TO STATE FOR THE OFFICIAL RECORD THAT ACCORDING TO THE RESPONDENTS, ALL OF THE EXPERIMENTATION REPRESENTED/DISCUSSED IN THE ABOVE ALLEGATIONS WAS DONE AT THE UNIVERSITY OF COLORADO AND NOT AT LSUHSC-S.

Appendices

1. Questions Compiled for Dr. Mintu Pal

1. How did you become aware of problems with the figures in the J. Biol. Chem., 2013 paper?
2. How did these errors occur?
3. Who was involved in making those figures?
4. Whose experiments produced the data that are represented in those figures?
5. Who reviewed the figures in the manuscript prior to submission for publication?
6. Who reviewed the primary data from which the figures were derived?
7. What was Hari Koul's role in the work described in the manuscript?
8. What was Hari Koul's role in the preparation of the manuscript?
9. What was Sweaty Koul's role in the work described in the manuscript?
10. What was Sweaty Koul's role in the preparation of the manuscript?
11. Have you been contacted by the Website Pubpeer.com?
12. If so, when and what was the nature of that contact?
13. Have you visited Pubpeer.com?
14. Have you posted comments to Pubpeer.com?
15. Have you been contacted by anyone else regarding irregularities in this or in any other manuscript?

2. Questions Compiled for Dr. Hari Koul

Opening Questions

1. When did you first become aware of problems with your recent JBC paper by Pal, et al?
2. From the information that was conveyed to the committee, Dr. Pal was the one who raised the initial concerns to you about the paper. How did he first contact you about these concerns—was it in person, via telephone, or email?
3. How long after the initial contact about the issue by Dr. Pal did you sit down and discuss the matter with him (if it was done by email or phone).
4. Did he convey to you his version of the sequence of events that led to his discovery of the discrepancies in the paper?
5. When you did meet with him in person, how did Dr. Pal react to the discovery of the potential problems—was he apologetic, calm, fearful, distraught?
6. Would you please tell us what he told you with regard to his discovery?
7. Did you ask him his thoughts as to how he made the mistakes during the assembly of the figures in question?
8. After your initial communication with Dr. Pal, can you describe for us your version of the timeline of events and communications that ultimately resulted in the retraction of your paper?

Pubpeer related questions:

On the website PubPeer, there are individuals who are pointing out issues with the data in 8 of your recent manuscripts, dating back to 2008. Our understanding is that Dr. Roerig has informed you of this website, with the evidence on the website being discussed in terms of ethical misconduct.

9. Have you read these online discussions?

*If answer is no, then: Why not? Aren't you concerned that you may have published additional articles that may need to be retracted?

*If answer is yes, then:

What initiatives are you taking to follow up on the allegations being presented on this website? So far, you have retracted just one of these articles – what are your plans regarding the possible retraction of other articles?

10. Have you ever been contacted by Pubpeer?

11. Have you ever posted to Pubpeer?

12. Did you make Dr. Pal aware of this website? (How does this square with Pal's answer?)

Procancerresearch related questions:

Following the email to you from Dr. Pal, Dr. Roerig made you aware of an email from Procancerresearch.

13. Have you been contacted directly by this individual?

It appears that Procancerresearch has taken a considerable amount of time and effort to review your recent publications for evidence of misconduct and may be using PubPeer as their forum to air their displeasure.

14. Do you have any idea who that might be?

15. Do you believe that it may be someone from this institution?

16. Do you believe that it may be someone from the University of Colorado?

Dr. Koul's role/responsibility related questions:

When one reads the postings on Pubpeer, there seems to be a consistent pattern of discrepancies with regard to duplications of figures/images within the body of 8 manuscripts listed on the webpage.

17. Given the fact that there were multiple individuals involved in the production of these manuscripts and few of the individuals contributed to each and every paper, how do you think these problems occurred?

18. You have mentored a number of postdoctoral fellows in your career. How often do you meet with them privately? (How does this square with Pal's answer?)

19. In those meetings, do you review their primary data?

20. When presented with a finished figure by a member of your lab, do you check that figure against the data in their notebooks or the primary data on their computers?

21. Who performs each step of the process in publishing your data (collection, statistical analysis, verification of the data, making the figures, selection of the representative pictures to be used, etc)?

22. The teaching of bioethics is an important part of the mentoring process. How do you go about teaching bioethics to your trainees in either formal or informal settings?

23. Since becoming aware of the allegations of research misconduct that have been leveled at your lab, have you instituted any review of your previously published work to determine whether there are any instances of misconduct or misrepresentation of data in those publications?

24. Have you instituted any changes in how you review manuscripts or the data contained in those manuscripts prior to submitting them for publication?

25. Do you believe that you put pressure on those in your lab to produce figures, either on a tight deadline or that illustrate a particular point?

If he places blame solely on his former lab members, stating no personal knowledge or involvement in the problems, then:

26. What in your lab environment could lead to this many problems in your publications?

3. PubPeer Postings discussing irregularities in “Mintu Pal, Sweaty Koul, and Hari K. Koul (2013). The transcription factor sterile alpha motif (SAM) pointed domain-containing ETS transcription factor (SPDEF) is required for E-cadherin expression in prostate cancer cells. J. Biol. Chem 28 (17) 12222-31” Images captured directly from website via Apple Computer “Grab” application; cropped and resized for viewing/printing. Note posting dates on website.

Comments (10):

Sort By: Recent

533 views

0 Unregistered Submission: (May 8th, 2014 3:25am UTC)

Figure 1C, Figure 2C

Please compare GAPDH in Figure 1C and GAPDH in Figure 2C. Bands were cut, resized and reused in what supposed to be different blots.

<http://i.imgur.com/RdJBCE8.jpg>

Figure 6A, 6C, 8A

Please compare the right panels in Figure 6A, 6C, 8A. Identical images were reused.

<http://i.imgur.com/JWE4Sbx.jpg>

Reply

Report

Permalink

Peer 1: (May 8th, 2014 4:14pm UTC)

Agree with your comment about GAPDH in Figure 1C and 2C ~ A section in 1C appearing to have been compressed and stretched with a tell tale mark in the 3rd GAPDH lane of 1C.

Figure 6A and 8A do appear to be the same images, slightly frame shifted (no too sure about 6C though).

Reply

Report

Permalink

Peer 2: (May 11th, 2014 7:25pm UTC)

Your image with those overlapping Fig. 6+8 microscopy fields is awesome

<http://i.imgur.com/JWE4Sbx.jpg>

I haven't had so much fun since I was given my first "Where's Wally"!

<http://i.imgur.com/hSePBXR.jpg>

Did I miss anything - I fear that it is almost impossible to finish the challenge?

Reply

Report

Permalink

Unregistered Submission: (May 11th, 2014 9:41pm UTC)

Sincere thanks to the authors for making it an actually fun mystery collage! This one is for you Peer 2, I just found another duplication:

Figure 8A siRNA Neg 24 hr (left side) is the same as Figure 8A siRNA Neg 48 hr (right side). You can now piece (left to right) siRNA Neg 48 hr with siRNA Neg 24 hr and then siRNA E-Cadherin 24 hr to make a nice strip of multi-treated, temporally-distinct cells!

If it's not too much work, I would appreciate if Peer 2 would add that duplication in (if there are

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If it's not too much work, I would appreciate if Peer 2 would add that duplication in (if there are still colors left) and repost the image on imgur (Thanks!). It is such a priceless piece of scientific history (and can turn into a fun game for the responsible conduct of research workshop!).

On a more serious note, the fact that there are people that still think they can get away with all these image duplications is baffling.

- The Commissar

Permalink

Peer 2: (May 12th, 2014 7:17pm UTC)

@Commissar

Oh well, how disappointing not to have completed the challenge :(

<http://i.imgur.com/uvF5LXw.jpg>

Luckily strawberry was still available. As is turquoise, should you find any more matches. After that colour-coding might get difficult. Still there should be fifty shades of grey if needed.

Fig. 7 has more of these sorts of figures

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3636906/figure/F7/>

Wally might also be hiding in those images. And, er, there just might be a teeny soupçon of image touch-up waiting to be highlighted....

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Unregistered Submission: (May 12th, 2014 9:44pm UTC)

Grab your turquoise marker because Figure 7A LNCap Scr 48h. and Figure 7A LNCap SPDEF KD 24h. are slightly shifted duplicates!

-The Commissar

tor sterile alpha motif (SAM) pointed domain-containing ETS transcription factor (SPDEF) is required for E-cadherin expression in prostate cancer cells

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0 Unregistered Submission: (May 12th, 2014 9:38pm UTC)

Wow! Figure 7:

<http://imgur.com/xvP5U65>

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Peer 2: (May 13th, 2014 4:57pm UTC)

@Commissar and Unregistered

Turquoise still needed. Both Fig. 7 0 hr are also related by similar slight shift to the ones you already show.

<http://i.imgur.com/rEfnMeT.jpg>

Note also that the "goal posts" have been moved too and that makes it harder to see the similarity in the quite featureless 0 hr fields. Red arrows indicate the relative direction of adjustment.

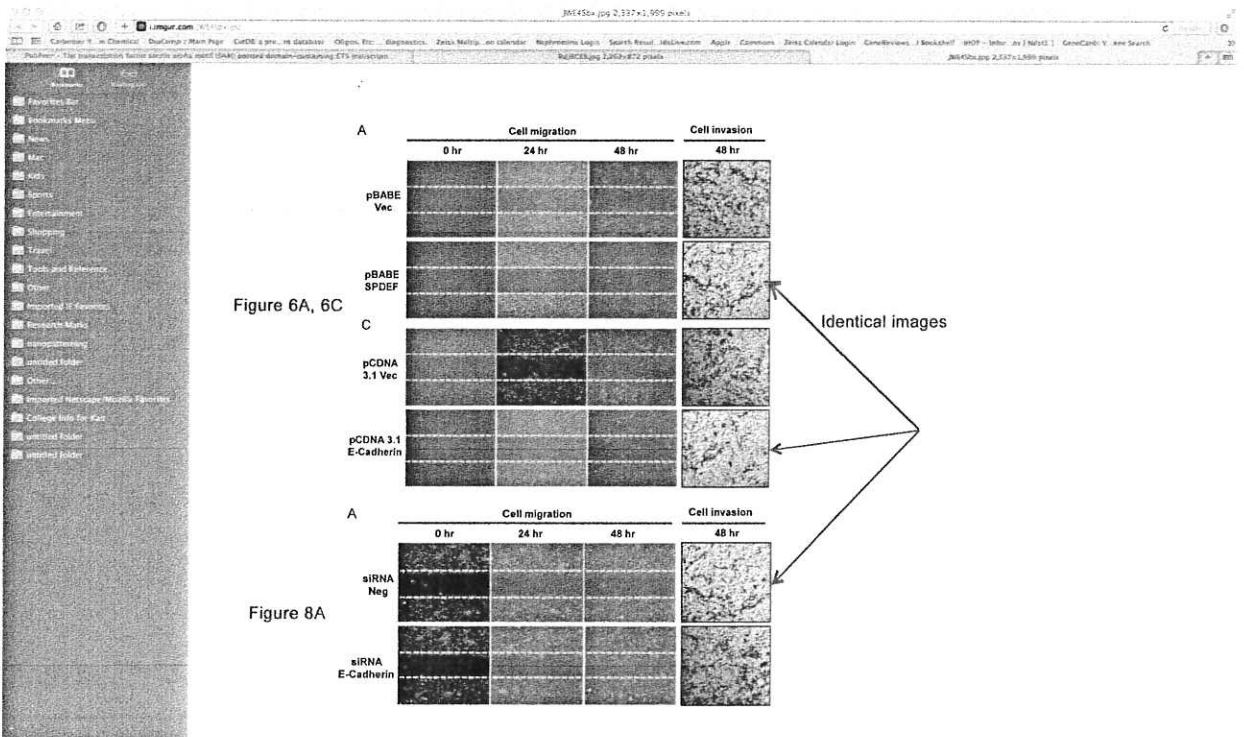
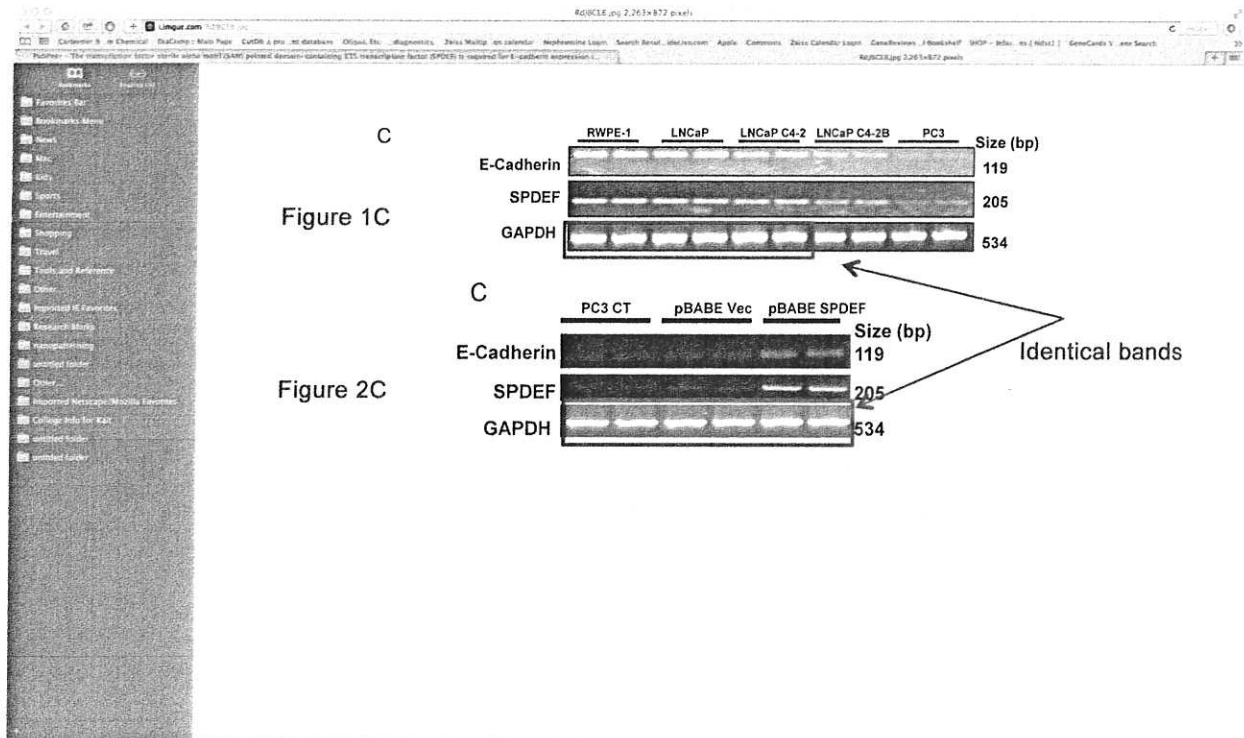
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Unregistered Submission: (May 15th, 2014 2:45pm UTC)

Fig. 7 vs Fig. 8C:

<http://imgur.com/BIAt1BG>

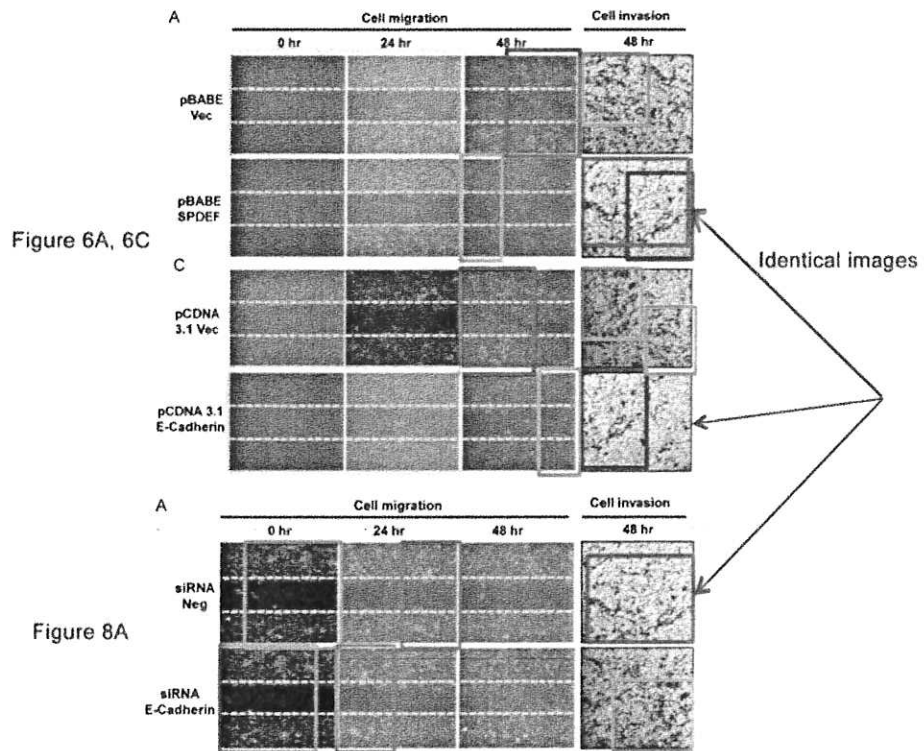
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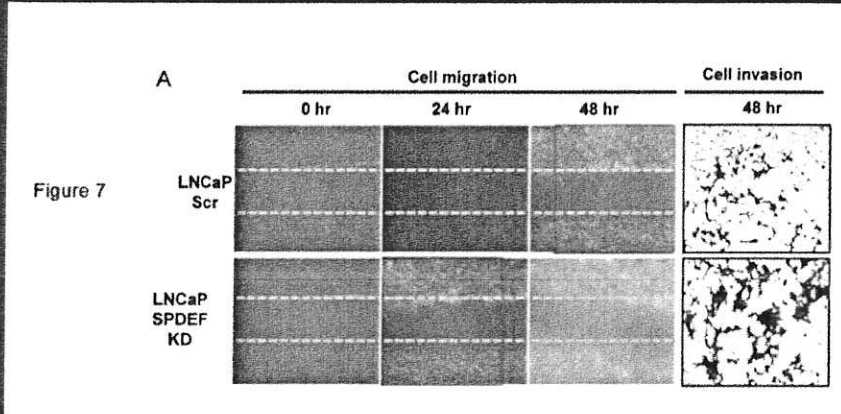
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Figure 7

