

PEER-REVIEW REPORT

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Reviewer's code: 02653160

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Author's Country/Territory: Oman

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|---------------------------------|---|
| Scientific quality | <input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| Language quality | <input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection |
| Conclusion | <input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection |
| Re-review | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Peer-reviewer statements | Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

Comments on 64628: Proteomics: Concepts and Applications In this review, the authors described concepts and applications of proteomics in human medicine. There are several issues to be considered as follows: 1. In the Introduction Section, 1.1. "The number of human proteins reaches about one million, containing some modifications such as posttranslational modifications (PTMs). However, the human genome holds 26,000–31,000 proteins." - The first and second sentences appear to contradict each other. How many human proteins are there, one million or 26,000–31,000? 1.2. "Protein expression mapping uses two-dimensional (2D) gel electrophoresis combined with mass spectrometry for quantitative proteomes expression in cells, body fluids, or tissue." - The authors emphasize 2D-PAGE in combination with MS. What about 1D-PAGE (SDS-PAGE) and gel-free MS? Please describe them too. 1.3. "The protein separation can be considered either by "in-gel solution" or by chromatography called "off-gel". - This is not correct. What is the definition of off-gel? Do the authors mean liquid isoelectric focusing (OFFGEL) protein fractionation /gel-free proteomics? In both gel-base and gel-free LC-MS/MS, protein samples will be separated by HPLC prior to MS. 1.4. Qualitative proteomics can provide information on diseases' molecular mechanisms and compare two groups such as diseased patients with healthy people. - Please provide references. 2. Please give examples of all types of proteomics. 3. "Two-dimensional variations can also be used in the techniques of gel electrophoresis (2D-DIG) and sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE)." - What is 2D-DIG? The abbreviation is used without a full name. - In fact, SDS-PAGE is 1D-PAGE, isn't it? 4. "Because of some limitations of a 1-Da gel, the proteins only used after some purification. So in the case of a more complex protein, the 2-DE can be used." - This is not correct. Do we really need to purify protein before applying to 1D-gel? Both 1D and 2D gel are widely used in combination of MS. 5. "2.1.2. Chromatography-based approach" - Why



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did the authors describe this topic? Do they misunderstand the core context of the article?
How to link this topic with proteomics? 6. "2.2.1 Edman sequencing" - Similar to
No.5., how to link this topic with proteomics? 7. "2.3 Protein Identification and
Validation" - This topic is not clear. Proteomics can be validate using bioinformatic tools
(such as STRING or STITCH programs, Venn diagram, etc.) and wet labs (such as
western blots, ELISA, etc.). Please describe them. 8. "3. Bioinformatics in proteomics"
Please describe programs generally used to analyze proteome data such as MASCOT,
Panther, STRING or STITCH programs, Venn diagram, etc. 9. Please give a full name of
AML. 10. Some misspelled words appear. Please correct the title to be Proteomics:
Concepts and Applications in Human Medicine.