

Posudek oponenta

Autor práce: Anesa Suljic

Název práce: Optimizing the method of determining the yield of hyaluronic acid in small volumes of the fermentation culture

Typ práce: bachelor

Oponent práce: doc. Ing. Radim Vrzal, Ph.D.

	Kritérium hodnocení	Hodnocení						Nelze hodnotit
		A	B	C	D	E	F	
1	rozsah práce, vyváženost rozsahů jednotlivých částí a jejich strukturovanost				X			
2	kvalita literární rešerše (např. množství použitých původních pramenných zdrojů, vhodnost výběru)		X					
3	naplnění cílů podle zadání práce a poznatků z literární rešerše				X			
4	správnost a úplnost legend u obrázků a tabulek (např. srozumitelnost bez zřetele k ostatnímu textu, vysvětlení značek, jednotky uváděných veličin)			X				
5	správnost používání citačních odkazů (např. přítomnost necitovaných údajů, dodržování jednotného stylu citací)			X				
6	výstižnost souhrnu práce v českém a anglickém jazyce		X					
7	grafická úprava textu a obrázků		X					
8	jazyková a stylistická úroveň, respektování platné nomenklatury a terminologie				X			
9	volba vhodných experimentálních metod	X						
10	srozumitelnost a výstižnost popisu používaných metod			X				
11	úroveň zpracování experimentálních dat						X	
12	adekvátnost interpretace dílčích experimentálních dat				X			
13	diskuze (souhrn získaných výsledků a jejich začlenění do kontextu dosavadního výzkumu)		X					

Poznámka 1: Pokud charakter práce nedovoluje použít některé z Kriteříí hodnocení, použijte sloupec "nelze hodnotit"

Poznámka 2: Hodnocení křížkujte

Poznámka 3: Do výsledné známky se započítávají jen hodnotitelné položky

* - doplňte „bakalářská“ nebo „diplomová“

Známka	D
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Závěr: práci doporučuji k obhajobě

V Olomouci dne:

19.8.2019

Podpis:

Posudek oponenta

The bachelor thesis of Anesa Suljic deals with the optimization of the method for determining hyaluronic acid yield. While there is a tendency to follow the structure and recommendations for bachelor thesis in the field of natural sciences, there are several errors that significantly decrease the merit of this work.

Among the most obvious, there are many typing errors that are obvious not only at the title page but in fact on every page of the bachelor thesis. This signifies low final control of the thesis before printing and delivery to maternity department.

Other misconducts are for example: in "Contents" section, where there are numbered only 2 subchapters of 8; repeated using the citations from citations (e.g. pages 10, 11); Latin names of bacteria inconsistently written in vertical font instead in italics (page 15); no mention of what statistical test was used and what was compared while mentioning the significance in the Discussion section (p.35) with absurd level of significance $p < 0.5$.

However, probably the most handicapped section within the bachelor thesis is the Results section. The text is indeed the table/graphs legend and no real Results section is present. The first five graphs representing the dependency of Absorbance on the time in the presence of SDS could be easily replaced by one containing all five curves inside one graph or the slope could be calculated and presented in well-arranged table. In addition, almost all data present in tables are duplicated in graphs, the presence of which is meaningless. The calculated averages do not contain adequate standard error of the mean and no relevant statistical evaluation is done.

Moreover, Materials and Methods section lacks some key points that could help to easily understand and reproduce the presented measurements. In the section of HA determination, it is not clear how "k" was calculated or where it was taken from. In the section of Isopropyl alcohol precipitation assay (IPAPA), it is measured optical density (OD) at 640nm and HA concentration is calculated by unknown way and it is presented next to OD in Table 1. If HA concentration can be calculated from optical density, why is necessary to perform other steps in IPAPA ?

In addition, the optimization process usually requires to change at least one parameter and monitor the dependent one, which should reach a maximum/minimum – local extreme. In this case e.g. SDS concentration (that do not denaturate SpHyl) should have been changed and the HA yield should have been calculated. This was not performed here.

I have the following questions:

- a) The presence of unsaturated saccharides is not very common. Could you emphasize where these compounds are coming from and what is their structure?
- b) The absorbance of what compound is measured at 232nm in SpHyl activity assay?
- c) Why there is the yield of HA in Table 1 (p.23) in g/L when the sample in Material and Method section is in grams (p.16)?
- d) In methods section you treated samples for SpHyl assay for 10 min/37°C – Why was chosen this time and would the result be better if you prolonged the incubation time?
- e) What was the reason to add chelaton III into SpHyl preparation method? Did you try different concentrations of chelaton III?

