

FIZIOLOGIJA ŽIVALI

Laboratorijske vaje

Splošna navodila

dr. Katja Adam
UP FAMNIT



E-učilnica

- Obvezen vpis!
- Literatura
- Ppt-ji in ostalo gradivo za vaje
- Oddaja poročil
- Ocene poročil in kolokvijev
- Obvestila



Fiziologija živali 22/23

1.letnik

Izvedba vaj

- **VAJE:**
 - četrtek, 2 skupini:
 - 1. sk. 8:00-11.30
 - 2. sk. 12:30-16:00
 - prvič vpisani, 4 šolske ure/teden
- **VAJE OBVEZNE** – 1. odsotnost brez opravičila, 2. odsotnost opravičljiva z zdravniškim potrdilom
 - prisotnost pogoj za pristop h kolokviju
- vaje se izvajajo v računalniški učilnici / laboratoriju
- **računalniške simulacije + praktične vaje**
- teoretična razlaga, praktično delo, odgovarjanje na vprašanja, skupna diskusija
- **samostojno delo doma:** SPROTEN pregled vaj

Termini vaj

	DATUM	TEMA
Uvodne vaje	23.2.	NAVODILA
1. Vaja	2.3.	TRANSPORT ČEZ MEMBRANO
2. Vaja	9.3.	KRI
3. Vaja	16.3.	SRCE
4. Vaja	23.3.	DIHANJE
5. Vaja	30.3.	PREBAVA, IZLOČALA 1
6. Vaja	6.4.	IZLOČALA 2 + KISLINSKO BAZIČNO R.
7. Vaja	13.4.	ŽIVČEVJE
8. Vaja	20.4.	MIŠICE
PRAZNIK	27.4.	
9. Vaja	4.5.	ENDOKRINI SISTEM
10. vaja	11.5.	PONAVLJALNE VAJE
KOLOKVIJ	18.5.	1. rok

SKUPNO 45 ur vaj:

- uvodne vaje - navodila
- 9 terminov po 4 šolske ure
- ponavljalne vaje
- kolokvij

IZVEDBA 2. VAJE (9.3.):

1. skupina:

8:00-10:00 Botanična vaj.

10.00-11.30 Delta

2. skupina

12:30-14:30 Botanična vajalnica

14:30-16:00 Delta

Ponavljalne vaje

- 11.5.
- možnost ponovitve vaj, ki so bile slabše ocenjene
 - možnost popravka in ponovne oddaje 2 poročil
- dodatna pojasnila teorije/rezultatov
 - do **5.5.2021** poslati **SKUPNA** vprašanja na e-mail katja.adam@upr.si

Ocenjevanje VAJ

- KOLOKVIJ – 80% ocene
 - 18.5.2020 – 1. rok, v času izvajanja vaj
 - vprašanja povezana s simulacijami, praktičnimi vajami in teoretičnim ozadjem
 - 60% za pozitivno oceno
- poročila iz vaj – 20 % ocene
 - vsa poročila morajo biti pozitivno ocenjena!
 - ocenjena najkasneje pred ponavljalnimi vajami
- pozitivno ocenje vaje pogoj za pristop h izpitu!

ODDAJA IN OCENJEVANJE POROČIL

- **PO VSAKI VAJI SPROTI!**
 - oddaja na e-učilnico
 - za vsako vajo posebna naloga na e-učilnici
 - oddajate v času vaj, kasnejših oddaj ne bom upoštevala

Fiziologija živali 20/21

[Pregledna plošča](#) / [Moji predmeti](#) / [Fiziologija živali 20/21](#)

Skrbnišvo

+

⚙

▼

▼ Skrbništvo predmeta

⚙ Uredi nastavitve

> Uporabniki

▼ Filtri

> Poročila

⚙ Nastavitev redovalnice

> Značke

📄 Varnostna kopija

↕ Obnovi

↕ Uvozi

↩ Ponastavi

> Zbirka vprašanj

📁 Skladišča

📁 Prenesi učiteljeve datoteke

Dodaj blok

Dodaj ...

⌵

+

📄 Forum novic

✎

+

Poglavje 1

✎

+

LABORATORIJSKE VAJE - PPTji in LITERATURA

✎

+

LABORATORIJSKE VAJE - ODDAJA POROČIL

✎

+

📄 2_VAJA_PREHAJANJE SNOVI

✎

+

📄 3_VAJA

✎

+

📄 4_VAJA

✎

OCENJEVANJE POROČIL...

VSAKO POROČILO (simulacije): 50% abcd tipa, 50% pisni odgovori

Seznam študentov fiziologija živali - Excel																				
File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...																				
HF17																				
=(HB17/HC17)+(HD17/HE17))/2																				
	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO
1	pravilni odg.	skupno št. vprašanj	pravilni odg.	skupno št. vprašanj	03_5 SKUPAJ	pravilni odg.	skupno št. vprašanj	pravilni odg.	skupno št. vprašanj	03_6	pravilni odg.	skupno št. vprašanj	pravilni odg.	skupno št. vprašanj	03_7	pravilni odg.	skupno št. vprašanj	pravilni odg.	skupno št. vprašanj	03_8
2	10	10	3,5	4	0,9375	8	8	3,5	4	0,9375	9	9	6	6	1	12	12	5	5	1
3	10	10	3	4	0,875	8	8	1,5	4	0,6875	8	9	4	6	0,7777778	12	12	2,5	5	0,75
4	8	10	3,5	4	0,8375	7	8	2,5	4	0,75	9	9	5	6	0,9166667	9	12	4	5	0,775
5	8	10	4	4	0,9	6	8	3,5	4	0,8125	8	9	6	6	0,9444444	9	12	5	5	0,875
6	7	10	2	4	0,6	6	8	2,5	4	0,6875	8	9	6	6	0,9444444	9	12	5	5	0,875
7	10	10	3	4	0,875	8	8	3	4	0,875	9	9	6	6	1	12	12	5	5	1
8	10	10	4	4	1	8	8	0	4	0,5	9	9	5	6	0,9166667	12	12	5	5	1
9	8	10	3	4	0,775	8	8	2,5	4	0,8125	7	9	5	6	0,8055556	11	12	5	5	0,9583333
10	10	10	3	4	0,875	8	8	2	4	0,75	9	9	6	6	1	12	12	4,5	5	0,95
11	6	10	4	4	0,8	4	8	2	4	0,5	6	9	2	6	0,5	11	12	5	5	0,9583333
12	6	10	3,5	4	0,7375	8	8	2,5	4	0,8125	8	9	0	6	0,4444444	12	12	5	5	1
13	5	10	4	4	0,75	4	8	2	4	0,5	6	9	4	6	0,6666667	11	12	3	5	0,7583333
14	10	10	4	4	1	8	8	4	4	1	9	9	5,5	6	0,9583333	12	12	5	5	1
15	10	10	3	4	0,875	8	8	3	4	0,875	9	9	3,5	6	0,7916667	12	12	2	5	0,7
16	10	10	3	4	0,875	8	8	3	4	0,875	9	9	5	6	0,9166667	12	12	4	5	0,9
17	10	10	4	4	1	8	8	2	4	0,75	9	9	5,5	6	0,9583333	12	12	5	5	1
18	10	10	3,5	4	0,9375	8	8	3,5	4	0,9375	7	9	6	6	0,8888889	12	12	4,5	5	0,95
19	10	10	3	4	0,875	8	8	2	4	0,75	9	9	6	6	1	12	12	5	5	1
20	10	10	4	4	1	8	8	2	4	0,75	9	9	5,5	6	0,9583333	12	12	5	5	1
21	10	10	3	4	0,875	8	8	3,5	4	0,9375	9	9	6	6	1	12	12	5	5	1

NAVODILA ZA IZVAJANJE SIMULACIJ



Fiziologija živali 22/23

E-UČILNICA

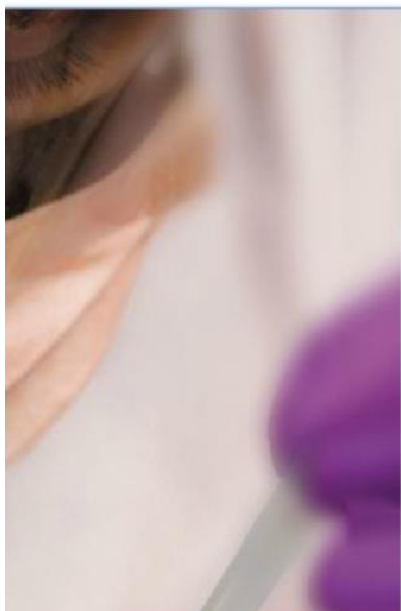
ODPRITE PROGRAM **Flash Player projector**

FILE -->OPEN

KOPIRAJTE IN PRILEPITE NASLEDNJO POVEZAVO V PROGRAM:

<https://www.student.famnit.upr.si/physioex9/main.swf>

PhysioEx™ 9.0



- Exercise 1: Cell Transport Mechanisms and Permeability
- Exercise 2: Skeletal Muscle Physiology
- Exercise 3: Neurophysiology of Nerve Impulses
- Exercise 4: Endocrine System Physiology
- Exercise 5: Cardiovascular Dynamics
- Exercise 6: Cardiovascular Physiology
- Exercise 7: Respiratory System Mechanics
- Exercise 8: Chemical and Physical Processes of Digestion
- Exercise 9: Renal System Physiology
- Exercise 10: Acid-Base Balance
- Exercise 11: Blood Analysis
- Exercise 12: Serological Testing

Exercise 1: Cell Transport Mechanisms and Permeability



Overview



Activity 1: Simulating Dialysis (Simple Diffusion)



Activity 2: Simulated Facilitated Diffusion



Activity 3: Simulating Osmotic Pressure



Activity 4: Simulating Filtration



Activity 5: Simulating Active Transport



Exercise 2: Skeletal Muscle Physiology

Exercise 3: Neurophysiology of Nerve Impulses

Exercise 4: Endocrine System Physiology

Exercise 5: Cardiovascular Dynamics

Exercise 6: Cardiovascular Physiology

Exercise 7: Respiratory System Mechanics

Exercise 8: Chemical and Physical Processes of Digestion

Exercise 9: Renal System Physiology

Exercise 10: Acid-Base Balance

Exercise 11: Blood Analysis

Exercise 12: Serological Testing

Objectives

1. To understand that diffusion is a passive process dependent upon a solute concentration gradient.
2. To understand the relationship between molecular weight and molecular size.
3. To understand how solute concentration affects the rate of diffusion.
4. To understand how molecular weight affects the rate of diffusion.

UVOD PRED VSAKO VAJO – tudi PPT

Pre-lab Quiz

1. The driving force for diffusion is

- ☐ a. ATP.
- ☐ b. the kinetic energy of the molecules in motion.
- ☐ c. the membrane transport protein.
- ☐ d. the dialysis membrane.

Check Answer

- pre-lab quiz NI del ocene poročil

Pre-lab Quiz

4. Avogadro's number is a constant for the number of

- ☐ a. moles.
- ☐ b. molecules.
- ☐ c. milliliters.
- ☐ d. atoms.

Check Answer



You have not answered all the questions in the Pre-lab Quiz.

Click **Submit** to record your results in the Lab Report and proceed to the Experiment.

Click **Continue** to proceed to the Experiment without submitting your answers.

Click **Cancel** to continue working on the Pre-lab Quiz.

Submit

Continue

Cancel

Overview

Objectives

Introduction

Pre-lab Quiz

Experiment

Post-lab Quiz

Review Sheet

Lab Report

1. Drag the 20 MWCO membrane to the membrane holder between the beakers.

Solute Concentration (mM)

Solute	Concentration (mM)
Na ⁺ Cl ⁻ (mM)	0.00
Urea (mM)	0.00
Albumin (mM)	0.00
Glucose (mM)	0.00

Avg. Diff. Rate (mM/min)

Solute	Avg. Diff. Rate (mM/min)

Timer (min): 60

Dialysis Membranes

MWCO	Color
20	Red
50	Purple
100	Blue
200	Green

Record Data

Solute	MWCO	Solute Concentration	Average Diffusion Rate

PEx Exercise 1: Cell Transport Mechanisms and Permeability > Activity 1: Simulating Dialysis (Simple Diffusion)

Overview Objectives Introduction Pre-lab Quiz Experiment Post-lab Quiz Review Sheet Lab Report

5. Click **Record Data** to display your results in the grid.

Solute Concentration (mM)

Na ⁺ Cl ⁻	9.000
---------------------------------	-------

Na⁺Cl⁻ (mM) 0.00 - + Dispense

Urea (mM) 0.00 - + Flush

Albumin (mM) 0.00 - +

Glucose (mM) 0.00 - +

Avg. Diff. Rate (mM/min)

Solute	Na ⁺ Cl ⁻	0.0000

Dispense Flush Deionized Water

Timer (min) 0 Start

Record Data

Solute	MWCO	Solute Concentration	Average Diffusion Rate

Dialysis Membranes

20 50 (MWCO) (MWCO)

100 200 (MWCO) (MWCO)

Undo

Reset

Stop & Think Question

The reason sodium chloride didn't diffuse left to right is that

- ☒ a. there wasn't enough time for diffusion to occur.
- ☐ b. the charge on sodium prevented it from diffusing.
- ☐ c. the membrane pore size was too small.
- ☐ d. it needs a steeper concentration gradient to diffuse.

Check Answer**Incorrect**

The correct answer is:
c. the membrane pore size was too small.

Submit

Undo

Reset

del ocene

Solute	Concentration (mM)
$\text{Na}^+ \text{Cl}^-$	9.000

Solute	Avg. Diff. Rate (mM/min)
$\text{Na}^+ \text{Cl}^-$	0.0000

Solute	MWCO	Solute Concentration
$\text{Na}^+ \text{Cl}^-$	20	9.00

Predict Question 1

NI del ocene

The molecular weight of urea is 60.07. Do you think urea will diffuse through the 20 MWCO membrane?

- ☒ a. Yes, but very slowly.
- ☐ b. Yes, quickly.
- ☐ c. No, not at all.

Submit

Solute Concentration (mM)

Solute	Concentration (mM)
Na ⁺ Cl ⁻ (mM)	0.00
Urea (mM)	0.00
Albumin (mM)	0.00
Glucose (mM)	0.00

Avg. Diff. Rate (mM/min)

Solute	Avg. Diff. Rate (mM/min)
Na ⁺ Cl ⁻	0.0000
Urea	
Albumin	
Glucose	

Timer (min): 0

Dialysis Membranes

MWCO	Color
20 (MWCO)	Blue
50 (MWCO)	Purple
100 (MWCO)	Green
200 (MWCO)	Red

Data Table

Solute	MWCO	Solute Concentration	Average Diffusion Rate
Na ⁺ Cl ⁻	20	9.00	0.0000
Urea			
Albumin			
Glucose			

KONEC POSKUSA – SUBMIT RESULTS

Post-lab Quiz

1. The effect of increasing the concentration of sodium chloride from 9 mM to 18 mM in the left beaker was to

- ☐ a. decrease the rate of diffusion.
- ☐ b. increase the rate of diffusion.
- ☐ c. no change to the rate of diffusion.

Click **View Experiment Results** if you need to review your results from the Experiment to answer a question.

View Experiment Results

After completing the Post-lab Quiz, you can view your results in the Lab Report.

- POST-LAB quiz JE del ocene poročil



You have not answered all the questions in the Post-lab Quiz.

Click **Submit** to record your answers in the Lab Report and proceed to the Review Sheet.

Click **Continue** to proceed to the Review Sheet without submitting your answers.

Click **Cancel** to continue working on the Post-lab Quiz.

Submit

Continue

Cancel

the Post
Report.

Review Sheet

1. Describe two variables that affect the rate of diffusion.

- REVIEW SHEET quiz JE del ocene poročil

Click **View Experiment Results** if you need to review your results from the Experiment to answer a question.

[View Experiment Results](#)

After completing the Review Sheet, you can view your answers in the Lab Report.

- nekaj vpr. za odgovoriti pisno
- kratki in jedrnat odgovori
- odgovarjanje v **SLOVENŠČINI** (except foreign students-EN)
- JE del ocene poročila (50%)

Review sheet

- če sprašuje ali ste pravilno napovedali – odgovorite z da/ne ter **pripišite, kaj ste napovedali**



You have not answered all the questions in the Review Sheet.

Click **Submit** to record your answers in the Lab Report and proceed to the Lab Report.

Click **Continue** to proceed to the Lab Report without submitting your answers.

Click **Cancel** to continue working on the Review Sheet.

Submit **Continue** **Cancel**

SHRANJEVANJE POROČIL (Lab reports)

PEX Exercise 1: Cell Transport Mechanisms and Permeability > Activity 1: Simulating Dialysis (Simple Diffusion)

Overview

Objectives

Introduction

Pre-lab Quiz

Experiment

Post-lab Quiz

Review Sheet

Lab Report

Lab Report

Save to PDF

Pre-lab Quiz Results

You scored 0% by answering 0 out of 4 questions correctly.

1. The driving force for diffusion is
You did not answer this question.
Correct answer: b. the kinetic energy of the molecules in motion.
2. In diffusion, molecules move
You did not answer this question.
Correct answer: a. from high concentration to low concentration.
3. Which of the following dialysis membranes has the largest pore size?
You did not answer this question.
Correct answer: d. 200 MWCO
4. Avogadro's number is a constant for the number of
You did not answer this question.
Correct answer: b. molecules.

Experiment Results

You have not completed the Experiment.

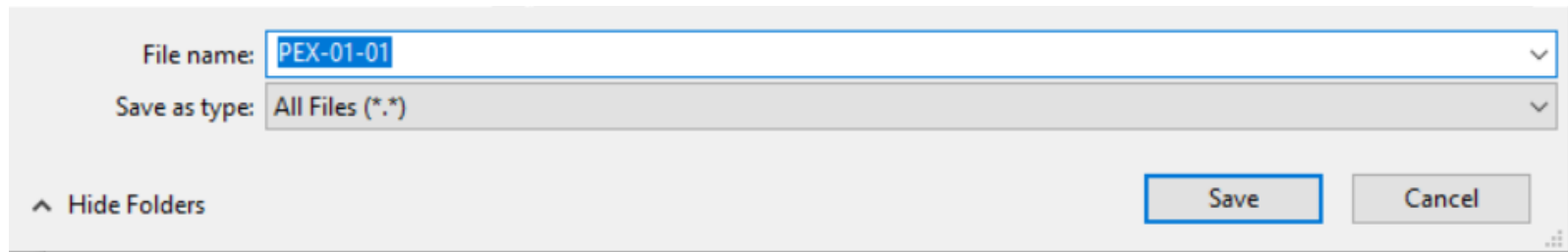
Post-lab Quiz Results

You scored 0% by answering 0 out of 4 questions correctly.



SHRANJEVANJE POROČIL

- **OBVEZNO: Pustite ime dokumenta + na koncu dodajte svoj priimek**



Mojca Novak: PRAVILNO

PEX-01-01_Novak

Mojca Novak: NEPRAVILNO

PEX-01-01

PEX-01-01_Mojca

PEX-01-01_MN

PEX-01-01_M_Novak

Novak_PEX-01-01

OPOZORILO PRED PLAGIATORSTVOM!

- za odgovore na vprašanja lahko uporabljate **www**
- sodelovanje med študenti **dovoljeno in zaželeno** 😊
- **VENDAR!!**
- odgovori na vprašanja na internetu
 - **NISO VEDNO PRAVILNI**
 - če bodo odgovori kopirani iz teh virov, poročilo ne bo pozitivno ocenjeno v celoti in boste morali vajo v celoti ponovno opraviti!

Physio Ex Exercise 1 Activity 1

Course:

Introduction to Human Physiology (PHYSCI XL 3)



Find study resources

Find Study Resources ▼ Ask Expert Tutors Earn by Contributing ▼

University of Santo Tomas / BI / BI 102 / PHYSIOEX 1 - Exercise 1 Cell Transport ...

PHYSIOEX 1 - Exercise 1 Cell Transport Mechanisms and...

School	Course Title	Uploaded By	Pages	Ratings
University of Sa...	BI 102	CassandraNicol...	4	👍 100% (1)

📄 This **preview** shows page **1 - 3** out of **4** pages.

Quizlet

Home

Create ▼

PhysioEx Lab Report Exercise 1 Activity 1

IN PODOBNE STRANI – NEDOVOLJENA UPORABA, PLAGIATORSTVO!



FIZIOLOGIJA ŽIVALI

Laboratorijske vaje

VPRAŠANJA???

