

QUIZ #5

For the multiple choice questions, there is *one* and *only one best* answer. Use the back of the sheet if you need to complete answers.

1. Which one of these is true?
 - a. a centriole has two centrosomes
 - b. a centriole has one centrosome
 - c. centrosomes are located within the nucleus
 - d. centrosomes are microtubule-organizing centers for the cell
 - e. centrosomes help ribosomes in protein synthesis

2. Which of these cell structures is a location where ribosomal RNA (rRNA) is synthesized and ribosome proteins assembled to form the large and small ribosomal subunits?
 - a. plasma membrane
 - b. nucleolus
 - c. smooth endoplasmic reticulum
 - d. mitochondria
 - e. peroxisome

3. Which type of RNA actually encodes the polypeptide that will be synthesized during translation?
 - a. ribosomal RNA (rRNA)
 - b. messenger RNA (mRNA)
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 - d. chromosomal RNA (cRNA)
 - e. none of the above

4. Do EITHER (a) OR (b)
 - (a) The human genome is 30% adenine (A). What are the percentages for the other three bases C, G, and T
 - (b) Give one fact—any fact---EACH of (i) microfilaments, (ii) microtubules, and (iii) intermediate filaments?

MICROFILAMENT - CONTAIN PROTEIN

MICROTUBULES - CONTAIN PROTEIN

INTERMEDIATE FILAMENTS - CONTAIN PROTEIN

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Physiology 115
Spring 2015

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Name David Adams

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$$A = 30\% \quad T = 30\% \quad C = 20\% \quad G = 20\%$$

10

Physiology 115
Spring 2015

Name LINDSEY SOUBB

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$$A = 30\% \quad T = 30\% \quad = 60\%$$

$$C + G = 40\%$$

$$\rightarrow C = 20\% \quad G = 20\% \quad T = 30\%$$

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Physiology 115
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Name _____

Lydia Zgackenb

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 - i) microfilaments are easily broken down within a cell
 - ii) microtubules help with the structure of the cell & keeping it stable & strong
 - iii) Intermediate filaments assist with keratin in the skin

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$$\begin{aligned} A &= T \\ G &= C \\ A &= 30\% \\ T &= 30\% \\ G &= 20\% \\ C &= 20\% \end{aligned}$$

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Name Kevin Chou

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By Chargaff's rule, A:T and G:C ratios are equivalent

A 30%

T 30%

C 20%

G 20%

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Name Torrie Thompson

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$$G=T \quad A=T$$

$$30\% A = 30\% T$$

$$100\% - 60\% = \frac{40\%}{2} = \boxed{20\% G \quad 20\% C \quad 30\% A \quad 30\% T}$$

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→ a) $A = 30\%$ $G = 20\%$
 $T = 30\%$ $C = 20\%$



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$$A = T \quad C = G$$

$$(a) \quad A + T + C + G = 100$$

$$\begin{array}{|c|} \hline A = T \\ \hline T = 30\% \\ \hline \end{array}$$

$$30 + 30 + 2C = 100$$

$$\begin{array}{rcl} 7 - 60 & + 2C & = 100 \\ - 60 & & - 60 \end{array}$$

$$\text{if } C = G, G + C = 2C$$

$$\frac{2C}{2} = \frac{40}{2}$$

$$C = 20\%$$

$$\begin{array}{|c|} \hline C = G \\ \hline G = 20\% \\ \hline \end{array}$$

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Name Brandon Velasco

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adenine - 30%

T - 30%

C - 20%

G - 20%

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Physiology 115
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Name Dawnn Smith

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Microfilaments — Synthesize from proteins

Microtubules — Strengthen the cell

→

Intermediate filaments — transfer proteins

10

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Name Noah Volz

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$$\text{a)} \quad A = T \quad 30\% A = 30\% T = 60\% AT \\ C = G \quad 40\% CG = 20\% C + 20\% G$$

$$C = 20\%$$

$$G = 20\%$$

$$T = 30\%$$

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Physiology 115
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Name Peter Choo

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 - (a) The human genome is 30% adenine (A). What are the percentages for the other three bases C, G, and T
Adenine 30%, Thymine 30%, Cytosine 20%, Guanine 20%
 - (b) Give one fact—any fact---EACH of (i) microfilaments, (ii) microtubules, and (iii) intermediate filaments?

a. $A = T = 30\%$ $C = G = 20\%$ $= 100\%$

(Adenine) $A = 30\%$

(Thymine) $T = 30\%$

(Guanine) $G = 20\%$

(Cytosine) $C = 20\%$

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Physiology 115
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Name shahrzad saba

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a)

30% A 30% T

20% C 20% G

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$$(d) \ . \ \% A = \% T, \% G = \% C$$

$$\therefore 30\% A = 30\% T$$

$$100\% - 60\% = 40\%$$

$$\therefore 20\% G, 20\% C, 30\% A, 30\% T$$

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purines = A, G = pyrimidines C, T
 Q $\% A = 30\%$, $\% A = \% C$, $\% C = 30\%$ $\% A, C = 60\%$
 D $\% G + T = 40\%$, $\% G = 20\%$, $\% T = 20\%$

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Microfilaments → made of Rod like structures

MicroTubules → used for locomotions of organelles and vesicles

Intermediate filament → composed of ~~proteins~~ ^fDitamer, tetramer
→ final composition is ^fproteins

12

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Name Zac Taylor

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 C = 20%
G = 20%

100

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microfilaments: thinnest, provide framework for cytoskeleton
 X intermediate filaments - formed in centrosomes
 ↗ microtubules - facilitate the movement of organelles w/in the cell

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15

Name Jacqueline Chu

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4. Do EITHER (a) OR (b)
 - (a) The human genome is 30% adenine (A). What are the percentages for the other three bases C, G, and T
 - (b) Give one fact—any fact---EACH of (i) microfilaments, (ii) microtubules, and (iii) intermediate filaments?

$$A = 30\%$$

$$T = 30\%$$

$$A = T$$

$$C = G$$

$$C = 20\%$$

$$G = 20\%$$

QUIZ #5

For the multiple choice questions, there is *one* and *only one best* answer. Use the back of the sheet if you need to complete answers.

1. Which one of these is true?
 - a centriole has two centrosomes
 - a centriole has one centrosome
 - centrosomes are located within the nucleus
 - centrosomes are microtubule-organizing centers for the cell
 - centrosomes help ribosomes in protein synthesis
2. Which of these cell structures is a location where ribosomal RNA (rRNA) is synthesized and ribosome proteins assembled to form the large and small ribosomal subunits?
 - plasma membrane
 - nucleolus
 - smooth endoplasmic reticulum
 - mitochondria
 - peroxisome
3. Which type of RNA actually encodes the polypeptide that will be synthesized during translation?
 - ribosomal RNA (rRNA)
 - messenger RNA (mRNA)
 - transfer RNA (tRNA)
 - chromosomal RNA (cRNA)
 - none of the above
4. Do EITHER (a) OR (b)
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$$\begin{aligned} A &= T \\ 30\% &= 30\% \end{aligned}$$

$$\begin{aligned} G &= C \\ 20\% &= 20\% \end{aligned}$$

$$60\%$$

$$100 - 60 = 40 \quad 1/2 = 20\%$$

$$A = 30\%$$

$$T = 30\%$$

$$G = 20\%$$

$$C = 20\%$$

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Physiology 115
Spring 2015

Name Chase Dudley

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A) 30% A 30% T 20% C 20% G

B) (i) microfilaments - composed of G actin + F actin
 (ii) microtubules - composed of tubulin protein
 (iii) intermediate - ~~be~~ twist and stack to form protofilaments.
 8 protofilaments form one intermediate filament

Physiology 115

Spring 2015

Name HINLEY, S 83 SUNEIS

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filaments? *RIBF AS (old)* *100T*

$$\text{A} - \text{G} = \text{C} - \text{T}$$

$3\phi^\circ - 3\phi^\circ = 7\phi\%$

BIMICROFILAMENTS → THINNEST

(ii) microtubules : ROD LIKE STRUCTURES
LIKE A STRAW

(iii) INTERMEDIATE: STRENGTH TO STRUCTURE

QUIZ #5

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(a)

C - 20%

G - 20%

T - 30%



(b)

(i) skin/mest

(iii) help proteins slide

(ii)