

# PEPTIDE

## A PROTEIN BUILDING GAME

by John J. Coveyou • 2 to 6 players • Ages 13+ • 30 to 45 minutes

### GAME SUMMARY

In Peptide, the goal of the game is to link *Amino Acid* cards side-by-side, forming what's called a *Peptide Chain*. To accomplish this, players must first select from a display of available *Organelle* cards, each of which rewards players with a unique combination of either resources or actions. Points are scored based upon the types of Amino Acids used to create your chain, and the player with the most points at the end of the game wins!

### COMPONENTS

#### 30 ORGANELLE CARDS

- 6 Vacuole
- 6 Ribosome
- 6 Nucleus
- 6 Mitochondria
- 6 Amino-Acyl



#### 27 AMINO ACID CARDS

- 20 Amino Acid
- 1 STOP Codon
- 6 Methionine START CODON



#### 48 RNA CARDS

- 12 Adenine (green)
- 12 Guanine (blue)
- 12 Cytosine (red)
- 12 Uracil (orange)



#### 32 ATP ENERGY TOKENS



#### OTHER CARDS

- 6 Reference cards
- 3 Bonus point cards
- 1 First Player card



*These components are only used in the **Advanced** game. Return them to the box if you are playing the **Basic** game.*

#### 12 VACUOLE TRACK MARKERS



#### 6 VACUOLE TRACK CARDS



# GAME SETUP

Before setup, decide if you wish to play with the *Basic* difficulty or the *Advanced* difficulty, which introduces more strategy. Changes in setup for the Advanced difficulty are explained the **Advanced Game** section.

1. Give each player 2 ATP tokens, 1 Reference card, and 1 Methionone Start Codon card. (Return unused cards of these types to the box.)



2. Separate the Organelle cards, the Amino Acid cards and the smaller RNA cards into their own decks.



## PREPARE THE ORGANELLE DECK

3. Shuffle the Organelle cards and place them face down as a deck somewhere near the left side of the play area. This is the Organelle Draw deck.



4. Next, place all the ATP Tokens in a pile above the Organelle Deck.

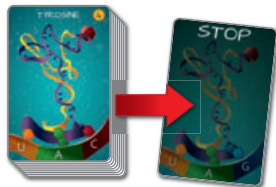


5. Stack the three Bonus Point cards to the left of your ATP supply. Order the stack +3 +2 +1 from the top down.



## PREPARE THE AMINO ACID DECK

6. Look at the face side of the Amino Acid cards to find the STOP Codon card and set it aside. Shuffle the remaining 20 Amino Acid Cards.



Then remove a number of cards from the deck at random based upon the number of players as indicated in the table seen here; return these removed cards to the game box.

Players:	2	3	4	5	6
Remove:	6	4	2	0	0

7. Take the STOP Codon card and insert it at random, face down, somewhere within the last 4 cards at the very bottom of the Amino Acid card deck.

Place these Amino Acid cards face down as a deck to the right of the ATP Stockpile.



## PREPARE THE RNA DECK

8. Shuffle RNA Cards and place them face down as a deck to the right of the Amino Acid deck. Then, flip the top two RNA cards face-up and place them side-by-side to the right of the RNA deck.



9. Give the youngest player the First Player card; whoever holds this card is the current First Player. Now you are ready to begin!



## EACH PLAYER'S SETUP



Leave room to the right of your Start Codon to connect your Amino Acid cards later. This will be your Peptide Chain.

## PLAY AREA SETUP

Bonus Point Stack



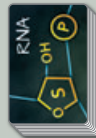
ATP Supply



Amino Acid Draw Deck



RNA Draw Deck



RNA Cards Available for pick up



Organelle Draw Deck



Organelle Field. This is explained in the Gameplay section.

*Note: Leave room on the table for separate RNA and Organelle discard piles.*

# GAMEPLAY

Peptide is played in rounds, which repeat until the STOP Codon Card is drawn from the Amino Acid deck, marking the last round of the game. Players will then play one more complete round before calculating points. Each **ROUND** is divided into two **PHASES**:

## PHASE 1: ORGANELLE SELECTION

Players will select from a number of face up Organelle cards which will provide them with either resources or actions.

## PHASE 2: ORGANELLE RESOLUTION

Players will resolve the Organelle cards they selected during Phase 1, receiving those resources or performing those actions.

## ATP ACTIONS

Players may spend their ATP tokens during their own turn of either Phase, to take a variety of ATP Actions. See more details in the **ATP Actions** section.

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## PHASE 1: ORGANELLE SELECTION

The first player begins each Phase 1 by dealing **2 Organelle cards per player** face up into the *Organelle Field* (This is the area to the right of the *Organelle Draw deck*, optimally in the center of the play area). Repeating Organelle cards should be stacked.

*For a two player game, deal **6 Organelle cards** face up into the *Organelle Field* rather than 2 per player.*

*If the *Organelle deck* runs out, shuffle the *Organelle discard pile* and place it face down as the *Organelle deck*.*



*Example: In a 3-player game, six cards have been dealt into the *Organelle Field*. Duplicate Nucleus and Mitochondria cards have been stacked to conserve space.*

Then, starting with the current First Player and moving clockwise, each player selects 1 available Organelle Card from the *Organelle Field*, placing it **face up** in front of them. Once all players have made their first selection, they will repeat this process (from the First Player clockwise) until each player has selected twice.

## ALTERNATIVE CARD SELECTION OPTIONS

Instead of the normal procedure on their turn (*selecting an Organelle card*), a player may opt to do **one** of the following:

- Choose an Organelle as normal but place it **face down** in front of them, signalling that in Phase 2 they will use that card to **collect 1 ATP** from the supply, rather than take that card's action.
- Choose to select the First Player card instead of an Organelle Card. The First Player card may be selected only **once** per round. The player who takes the card immediately becomes the new First Player.



*There may be Organelle cards remaining in the Organelle Field at the conclusion of Phase 1; discard any leftovers into an Organelle discard pile.*

After each player has made two card selections, Phase 1 is complete.

## PHASE 2: ORGANELLE RESOLUTION

Starting with the current First Player and continuing clockwise, each player will now take a turn to resolve **all** the Organelle cards they selected in Phase 1. Each Organelle card has a unique resolution that will include collecting resources or performing actions. See the **Organelle Resolutions** section for Organelle card resolution details.

*Players discard their Organelle cards as they play them, into an Organelle discard pile.*

*Players may resolve their own Organelle cards in whichever order they like.*

A **face down** Organelle card is resolved by discarding it and collecting one ATP token from the supply.

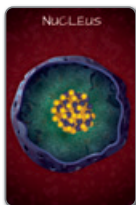


# ORGANELLE RESOLUTIONS



## MITOCHONDRIA: COLLECT ATP TOKENS

Collect two ATP Tokens from the ATP Pile and add them to your personal stock.



## NUCLEUS: COLLECT RNA CARDS

Collect RNA cards in one of two different ways. Either:

- Select 1 face up RNA card and add it to your hand. (*Players should keep their RNA cards concealed from other players*).

*Immediately flip a new RNA card face up from the RNA deck to replace it. When there are no cards remaining in the RNA deck, shuffle the RNA discard pile to create a new RNA Deck.*



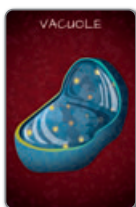
**Pick 1, reveal a new one.**

**OR**

- Draw 2 face down RNA cards from the RNA deck, select one to place in your hand, and discard the other.

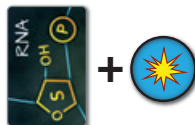


**Draw 2, keep 1.**

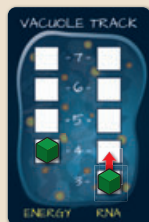


## VACUOLE: COLLECT RNA AND ATP

Draw the top RNA card from the RNA deck to add it to your hand and collect one ATP token from the ATP pile to add to your personal stock.



In the **Advanced** game there is a second option; instead of the normal Vacuole action you may increase your ATP or RNA maximum by moving the respective marker up one step on your Vacuole Track.





## AMINO-ACYL SYNTHETASE: PAY ATP TO COLLECT AN AMINO ACID CARD

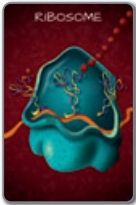
Pay 2 ATP, then draw the top two Amino Acid cards from the Amino Acid deck, choose one to keep in your hand and place the other **back on top of the Amino Acid deck face down**. (Players should conceal their Amino Acid cards from other players).



**Draw 2, keep 1.  
Return the other  
to the top of the deck.**



If any player draws the **STOP** Codon card among their two drawn cards, they **must** reveal it, place it in the center of the table face up, and keep the other card. This triggers the last round; see **Winning the Game** for details.



## RIBOSOME: ADD AMINO ACIDS TO YOUR PEPTIDE CHAIN

The Ribosome card is how you connect and score Amino Acid Cards. This card offers **two** options, of which you must choose only one:

### OPTION 1: ADD TO YOUR CHAIN

Pay 1 ATP, then match one **Amino Acid** card from your hand with three corresponding **RNA** cards from your hand.

See **Making a Match** on the next page for details about how to match RNA to Amino Acids.

Place that Amino Acid card **face up** to the **right** end of your Peptide Chain, and place those three RNA cards just below it.



*Example: This player pays 1 ATP and plays this Serine Amino Acid from her hand to the right end of her Peptide Chain, along with the three RNA cards (Uracil, Cytosine, and Adenine) that match it.*



If this is the **first** time you've made a match, play the Amino Acid card to the right of your **Methionine Start Codon** card; it is the starting point of your Peptide Chain.

## OPTION 2: MAKE AN ADDITION PERMANENT

Pay 1 ATP, then take your **leftmost** face up Amino Acid card (*placed earlier via Ribosome option 1 above*) and flip it face down (*keeping it in the same position on your current Peptide Chain*). This **permanently** connects that Amino Acid card to your Peptide Chain.

Then **discard** the three RNA cards from beneath the flipped Amino Acid.

Finally, take a **Bonus Points** card if any remain unclaimed. (*There are only three Bonus Point cards in the game, so this will only be possible the first three times this action is taken in the game by all players combined.*) Take the highest-value card remaining, which should be on top of the stack.



*Example: This player pays 1 ATP then flips her **leftmost** face up Amino Acid (the Serine, not the further-right Glutamine). She then discards the three RNA cards that were beneath it.*



*There is one Bonus Point card remaining (the +1), so she takes it. (The other two Bonus Point cards were claimed earlier; one by her and one by someone else.)*

## MAKING A MATCH

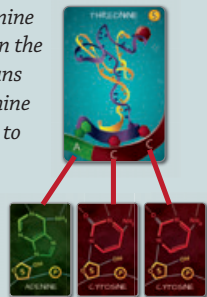
The bottom edge of each Amino Acid card displays a color-coded ribbon with a sequence of three letters. (*The letters will be some combination of A's, G's, C's and/or U's.*) Each of these letters represents one RNA card: "A" for Adenine, "G" for Guanine, "C" for Cytosine, and "U" for Uracil.

To make a match, the three RNA cards you play **must** be the three that are represented on the Amino Acid card you played.

*Example: Arginine displays C G A on the ribbon; this means you need 1 Cytosine, 1 Guanine, and 1 Adenine to make a match.*



*Example: Threonine displays A C C on the ribbon; this means you need 1 Adenine and 2 Cytosines to make a match.*



## ATP ACTIONS

During your turn, you may opt to pay ATP Energy tokens as described below to take the following actions. ATP Actions are in addition to a player's regular turn.

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### RESET THE RNA FIELD



Pay **1 ATP Token** to reset the RNA Field. Discard the 2 face up RNA cards and deal two new RNA cards face up from the top of the RNA deck.



**Discard these.  
Replace with  
new ones.**

### RESET THE ORGANELLE FIELD



Pay **2 ATP Tokens** to reset the Organelle Field. Discard all Organelle cards currently in the Organelle Field and replenish the Organelle Field with the **same number** of face up cards drawn from the Organelle deck.



**Discard these.  
Replace with  
new ones.**

### SELECT TWICE



Pay **3 ATP Tokens** (when it is your first turn to select an Organelle in a round, during **Phase 1**) to make both of your Organelle card selections consecutively instead of one at a time as normal. You will not get a second turn this round.

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ATP Energy tokens are "paid" into the supply pile.

# WINNING THE GAME

When the **STOP** Codon card is drawn from the Amino Acid deck, it must be laid face up in the center of the table, and announced to all players. This signals that the game is about to end. When the current round is finished, players will play one more complete round (*both Phase 1 and Phase 2*), then will calculate points to see who won!



## Calculate your score as follows:

Each Bonus Point card you hold is worth the points it displays.

Each **permanently connected** (*face down*) Amino Acid card in your Peptide Chain is worth its full value. (*Each Amino Acid's value is displayed on the top right of the card's front.*)

Each **added** but **not** permanently connected (*thus face up*) Amino Acid card in your Peptide Chain is worth **half** of its full value, rounded up.

Each Amino Acid card in your hand, **only if** you **also** have its matching RNA cards in your hand, is worth 1 point. (*Each RNA card may only be used once to create such matches.*)

**Lose 1 point** for each Amino Acid card in your hand for which you are **not** able to create a full match.

The player with the most points wins the game!

Example scoring:

You earn 3 points for your +3 Bonus Points card.



This is your Peptide Chain. You earn full points for the two face down Amino Acids. Asparagine is worth 5 points and Proline is worth 6 points.

You earn half points (rounding up) for the face up Valine card. 5 halved (rounded up) is 3 points.



These are the seven cards left in your hand; you earn 1 point for the Histidine card, since you can match the three correct RNA cards to it. You lose 1 point each for the Leucine and Serine cards, since you do not have enough of the correct RNA cards to match them.

Your final score is 16 points!

## THE ADVANCED GAME

The only difference between the Basic and Advanced game is that in the Advanced game players have limits on the maximum number of ATP tokens and RNA cards that they can hold.

During the game they will be able to increase those limits.

Game Setup and Gameplay for the Advanced Game is mostly the same as in the Basic Game, with the following modifications:

## CHANGES FOR ADVANCED SETUP

Complete all of the Basic steps for Setup, then add:

10. Give each player one Vacuole Track and two Vacuole Track Markers. Each player should place their Track on the table in front of them and put their markers on the 4 position of the Energy column and the 3 position of the RNA column.



## CHANGES FOR ADVANCED GAMEPLAY

The positions of your markers on your Vacuole Track represent the maximum number of ATP tokens (*Energy Column*) and RNA cards (*RNA column*) that you may hold at the **end** of a round.

*You may exceed your Vacuole Track limits while in the middle of the Organelle Resolution Phase, but must discard down to your limit at the end of the round.*

To increase your ATP token or RNA card capacity, in Phase 2 you may choose to resolve a selected Vacuole card by moving a single green cube up one space on your Vacuole track. (See the **Vacuole** section on page 6 for more details)

## CREDITS

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# PEPTIDE IN A NUTSHELL

Score points by linking **Amino Acid** cards to form a **Peptide Chain**. In order to *link* these Amino Acids, you must first *collect* them, along with the **RNA** cards and **ATP** tokens that make the process possible. Collecting these resources is done by selecting **Organelle** cards from the table center (in a **drafting** fashion). There are five different types of Organelle cards and each provides a different action.

Two game phases are repeated until the game ends, and the highest score wins!

## PHASE 1

Players collect Organelles by selecting them one at a time until each player has selected twice. *(The First Player card may be selected instead, but only once per round.)*



## PHASE 2

Players **resolve** their Organelles. Each type permits a different action:

### GATHER RESOURCES

**MITOCHONDRIA**  
Collect 2 ATP.

**NUCLEUS**  
Collect an RNA card; select 1 from the face-up cards or draw 2 at random from the deck and keep 1.

**VACUOLE**  
Collect 1 ATP and draw 1 random RNA card.

**AMINO-ACYL SYNTHETASE**  
Pay 2 ATP. Then draw 2 Amino Acid cards at random from the deck. Keep 1, place the other back on top. *(If you draw the STOP Codon card, the game ends after 1 more round.)*

### USE YOUR RESOURCES

**RIBOSOME**  
Pay 1 ATP, then either (1) **link** an Amino Acid card face-up to your chain along with the 3 matching RNA cards, **or** (2) **flip** a previously linked Amino Acid card over to increase its value *(and collect a bonus card if any remain)*.



You may also spend ATP on your turn to refresh the available RNA or Organelle cards, or to allow you to make both your selections in one turn.

At game end, calculate your score! Bonus point cards plus **linked** Aminos (*half value*) plus **flipped** Aminos (*full value*), plus some added/subtracted points based on cards left in your hand. Most points wins!