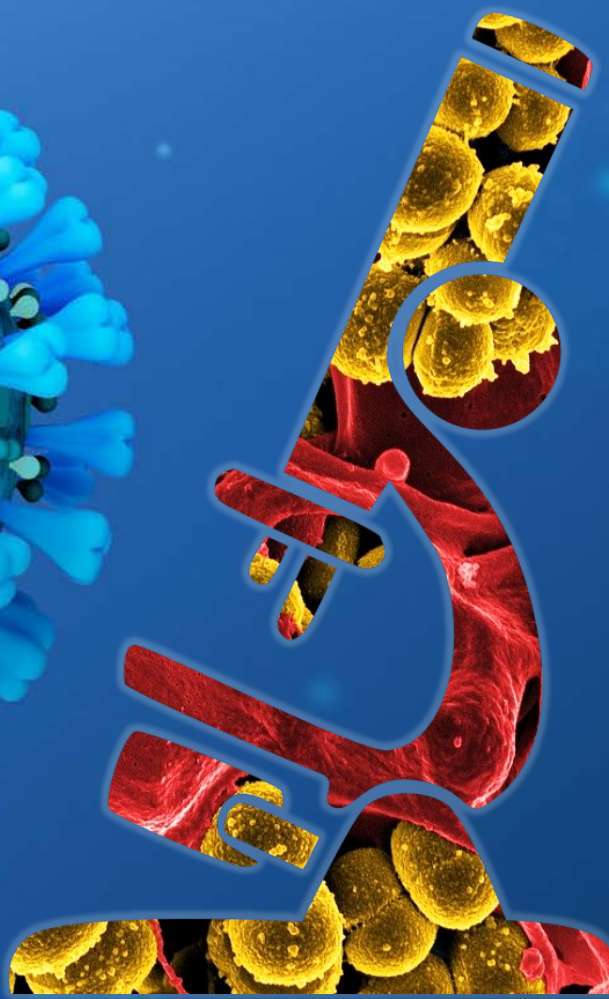
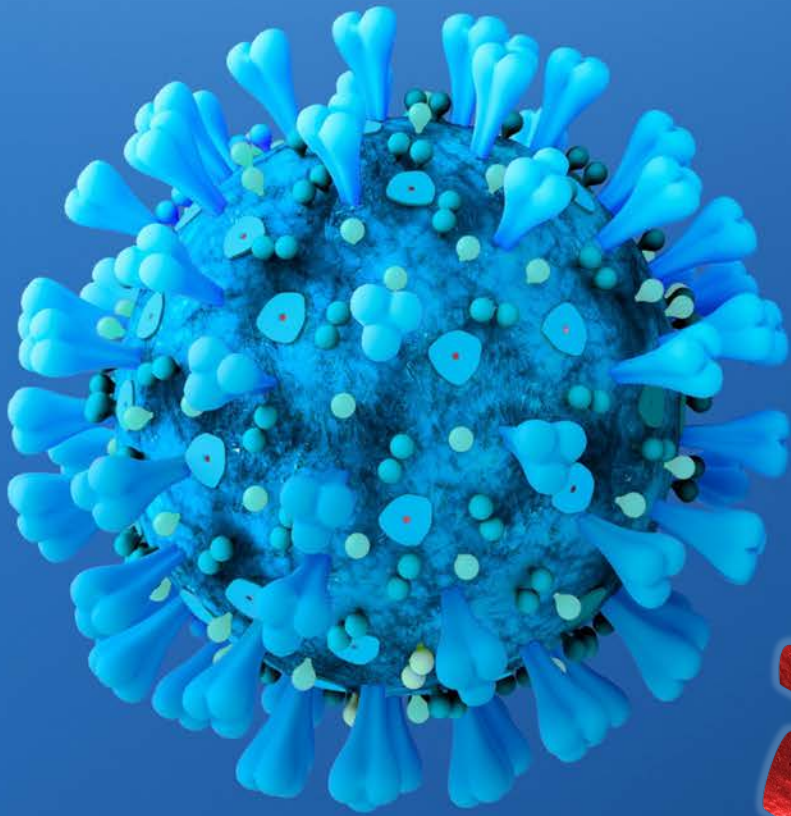


IMMUNIZATION


The Game



RULEBOOK

IMMUNITARIUM™



A laboratory scene featuring a person in a white lab coat and blue gloves. The person is pouring a red liquid from a glass flask into a glass beaker. In the background, there is a pipette and a metal component with the number '09' on it. The scene is brightly lit, and the background is slightly blurred.

**" Science knows no country,
because knowledge belongs to humanity,
and is the torch which illuminates the world."**

Louis Pasteur

IMMUNIZATION

GAME PLAY OVERVIEW

In a world threatened by persistent diseases and fast-spreading outbreaks, you are leading a pharmaceutical company developing the next generation of vaccines.

Your goal is to protect the most at risk populations against infectious diseases. You are challenged to develop effective vaccines by discovering the best antigenic formulations, to launch your clinical trials, to manage your production capacity and to define appropriate vaccine prices. Pay attention to your pricing strategy since the public opinion may influence your sales performance. Always remember to invest in new technologies and wisely manage your Research & Development budget in order to develop a successful vaccine portfolio to save lives!

Immunization can be played in a competitive mode  (see p.3) or a cooperative mode  (see p.13).



A « Quick competitive » version is also proposed where the profile of your company is pre-defined with specific Technologies and Expertise (see p.13).

GAME COMPONENTS (Base game)

- 5 erasable Disease boards
- 12 erasable Vaccine Development cards
- 22 Technology & Expertise cards
- 48 Toxicology & Clinical Study cards (12 Tox “Animal model” Study cards, 12 Tox “In vitro model” Study cards, 12 PhI/II Clinical Study cards, 12 PhIII Clinical Study cards)
- 4 Production Capacity and Public Opinion dual-layer boards
- 11 Dices:
 - 1 Vaccine Need dice (orange dice)
 - 3 Antigen 10-sided dice (1 blue dice, 1 red dice, 1 white dice)
 - 1 Vaccine Price dice (green dice)
 - 1 Incompatibility dice
 - 1 Tox dice (purple dice)
 - 4 Clinical Dices
- 110 coins (18 “value 1000” coins, 23 “value 500” coins, 23 “value 100” coins, 23 “value 50” coins, 23 “value 10” coins)
- 120 Reagent tokens (30 value “2” tokens, 30 value “10” tokens, 30 value “50” tokens, 30 value “80” tokens)
- 12 Microscope wooden tokens (3 red tokens, 3 blue tokens, 3 yellow tokens, 3 green tokens) used as markers and victory tokens
- 8 cubes (2 red cubes, 2 blue cubes, 2 yellow cubes, 2 green cubes) used as Production Capacity and Public Opinion markers
- 1 First Player Token
- 1 Funding token
- 5 wooden pawns (1 red pawn, 1 blue pawn, 1 yellow pawn, 1 green pawn, 1 white pawn)
- 1 Scoring board
- 4 Confidentiality screens
- 4 Dry erase markers
- 1 Scorepad
- 4 Action summary cards
- 1 Rule Book

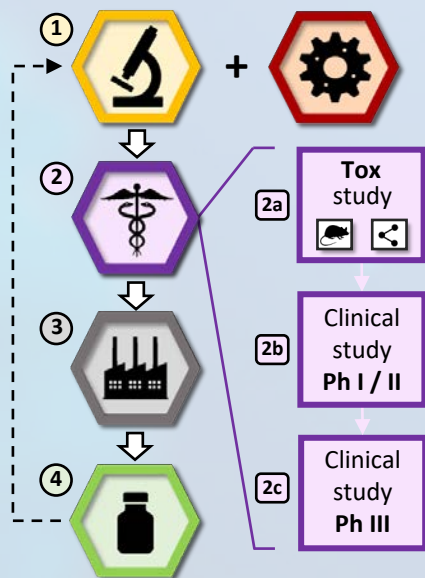
Glossary

- PO: Public Opinion
- RP: Recommended Price
- TA: Target Antigen
- T&E: Technologies & Expertise

- Tox: Toxicology
- VNs: Vaccine needs
- VP: Victory Point

GAME OBJECTIVE & PRINCIPLE

Competitive mode



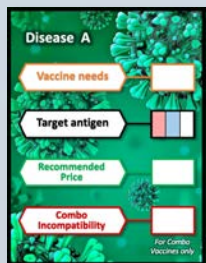
➤ Develop and manage a portfolio of vaccines. The player to immunize the most of people and to own the most of Victory Points (VPs) by the end of the last turn wins the game.

➤ The development of a vaccine can be summarized in 4 steps:

- ① **Research** of the vaccine formula with **Reagents** and **Technologies**
- ② **Preclinical & Clinical Validation** (Tox, Phase I/II, Phase III studies) to test the safety and efficacy of the vaccine
- ③ **Production** of the vaccine (Manufacturing)
- ④ **Launch** of the vaccine on the market

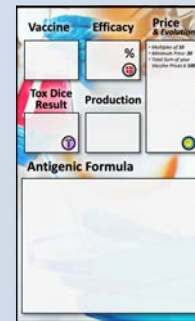
Notes: Additional Technologies and Expertise may be leveraged to accelerate the vaccine development process and to confer other advantages. During its life cycle, a vaccine may be removed from the market to go back to the research phase for further optimization.

PRINCIPAL GAME ELEMENTS



▪ Disease boards

A disease board describes the characteristics of a disease, the Vaccine Needs (VNs) and the Recommended Price (RP) for the related vaccine. The disease characteristics include the Target Antigen (TA) used for the development of the vaccine formula and the Incompatibility parameter which influences the development of “Combo” vaccines only (see Special Features - p.11).



▪ Vaccine Development cards

A vaccine card is used for the development of a vaccine. It describes the antigenic formula developed based on the reagents and technologies used during the research phase. The card also displays the name of the vaccine, its efficacy, the result of the Tox study, the quantity of produced vaccines and the price defined by the player.

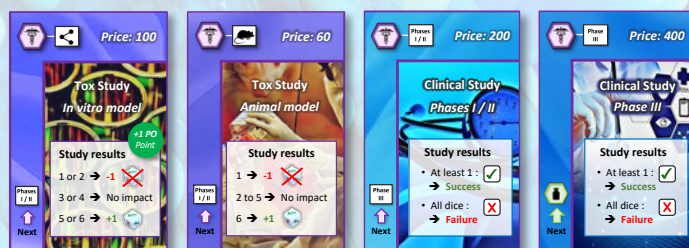
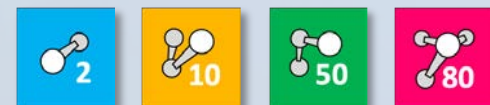


▪ Technologies & Expertise cards

Several Technologies & Expertise (T&E) may be purchased by the players to support the vaccine development process and to acquire specific skills. Each player starts the game with the Technology “[+]” (owned by default). The other T&E are purchased on the market place (or pre-assigned in the “quick competitive” version, see Game Variant section - p.13).

▪ Reagent tokens

The development of a vaccine requires reagents that may be purchased by the player depending on the antigenic formula (s)he wants to create. There are 4 types of reagents represented by specific values (2, 10, 50, 80). Each reagent costs 20 coins.



▪ Toxicology/Clinical Study cards

Each vaccine needs to be tested in a Toxicology (Tox) study (with in vitro or animal models) and validated in two clinical studies (a Ph I/II study followed by a PhIII study) before its launch on the market. The Study cards represent these 3 types of studies that may be purchased by the players.



Production Capacity and Public Opinion dual-layer boards

The Production Capacity section of the dual-layer board displays the number of vaccines (production units) that a player may produce each turn. The production capacity may be increased by investing in manufacturing and/or by acquiring specific T&E.

The Public Opinion (PO) section represents the reputation of your Company. The PO level can evolve during the game depending on your decisions and actions. A PO level too low will impact the sale performances of the Company.

The Research Award section is the area where players collect and store the Microscope tokens as victory points.

Coins

Coins are used to represent the Research & Development (R&D) Budget of each player. Coins allow players to purchase reagents and T&E cards, and to finance the Tox and Clinical studies.



Side A – Normal game



Side B – Quick game

Scoring & Turn counting board

The scoring board displays the number of people immunized based on the number of vaccines distributed by a Company (1 immunization = 1 vaccine need addressed by the sale of 1 vaccine production unit).

The board has two sides: Side A is used for a normal game. Side B is ideal for a quick game (the T&E are pre-assigned to the players).

GAME SET-UP

- A** Each player begins the game with the following components and dispose them according to the Figure 1:
 - 3 Vaccine cards
 - 1 Technology card [+]
 - 1 Pawn
 - 1 Confidentiality screen
 - 1 Production Capacity and Public Opinion board with 1 cube positioned on level 5 in the Production Capacity scale and 1 cube positioned on level 7 in the PO scale
 - 3 « value 1000 » coins (Research & Development budget = 3000 coins)
- B** Shuffle the T&E cards and put 4 cards face-up where everyone can reach them. It represents the market place. The remaining cards are placed face down to form a stack. Every time a player purchases a T&E card, a new card is drawn from the stack to replace the empty space.
- C** Separate the Reagents per type and place them in 4 stacks
- D** Separate the Tox/Clinical Study cards to form 4 stacks
- E** Put the 4 Clinical dice and the Tox dice where everyone can reach them
- F** Organize the coins in 5 piles that represent the bank
- G** Group the Microscope tokens in one stack
- H** Place the pawn from each player on the scoring board (start case) and the white pawn on the case indicating « Turn 1 »
- I** The number of Disease boards is determined based on the number of players:
 - 2 or 3 Players: 4 Disease boards
 - 4 Players: 5 Disease boards

Figure 1. Example of set-up for a 3-player game



Figure 2. Preparation of a Disease Board

Prepare each Disease board by rolling dices and writing the information with a dry erase marker as follows (Fig. 2):

- 1 Roll the VN dice (orange dice) and write the result in the « Vaccine Needs » case
- 2 Roll the 3 Antigen dices (red, blue and white 10-sided dice) and write the result in the « Target Antigen » case
Note: the red dice represents the hundreds, the blue dice the tens and the white dice the units
- 3 Roll the Vaccine price dice (green dice) and write the result in the « Recommended Vaccine Price » case
- 4 Roll the Incompatibility dice and write the symbol in the « Combo Incompatibility » case



HOW TO PLAY

❖ Taking a game turn

A game turn is composed of 3 stages: **1** the Action Stage; **2** the Vaccine production & Price adjustment; **3** the Vaccine sales (Fig.3)

Note: a fourth stage is added with the Outbreak expansion (see Outbreak rulebook)

A) Action Stage (Stage 1)

Successively, each player may perform **up to 3 actions** selected among the following list:

- Purchase Research Reagents
- Acquire a Technology or Expertise
- Perform a Tox Study
- Perform a Clinical Study
- Increase Production Capacity
- Launch a new vaccine on the market
- Remove a vaccine from the market

Note: A player may perform the same action up to three times.

Action description



➤ Purchase Research Reagents

A player may purchase up to 3 reagents (different types or same type). The purchase of **3 reagents** counts as **one action**. The coins are given to the bank.

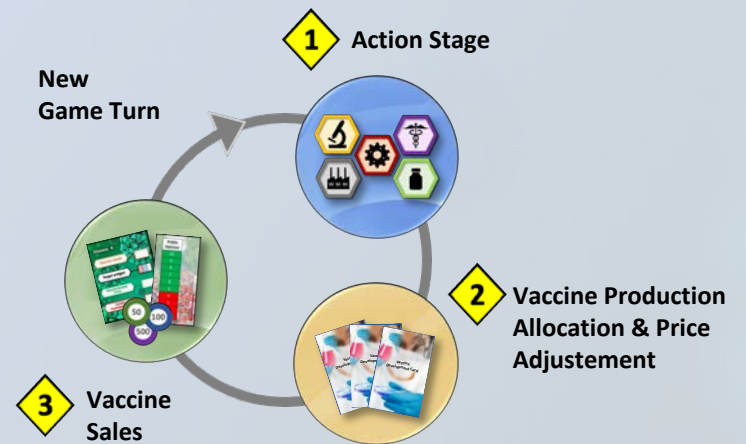


➤ Acquire a Technology or Expertise (T&E cards)

A player may purchase 1 T&E card from the market place (**only 1 T&E card per turn**). The coins are given to the bank.

Note: In case a player is running out of R&D Budget, the T&E cards can be resold to the bank to retrieve the value of the T&E in coins.

Figure 3. Game turn overview



Development of an Antigenic Formula

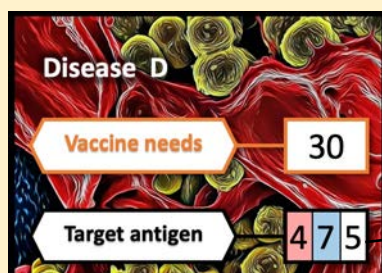
The Reagents and Technologies (mathematical signs) allow the development of vaccines. The formulation of a vaccine consists in finding the Antigenic Formula the closest to the Target Antigen (TA) value of a disease by using the purchased reagents and technologies. A player may compose operations on his vaccine card and then calculate the vaccine efficacy. The vaccine efficacy is calculated in two steps:

- **STEP 1:** Disease TA value **A** - Vaccine antigenic value **B** = **Antigenic Difference**
- **STEP 2:** 100 - Antigenic Difference = **Vaccine Efficacy C**

Note: if the Antigenic difference is negative in Step 1, inverse the subtraction terms by calculating (Vaccine antigenic value - Disease TA value) and continue with Step 2

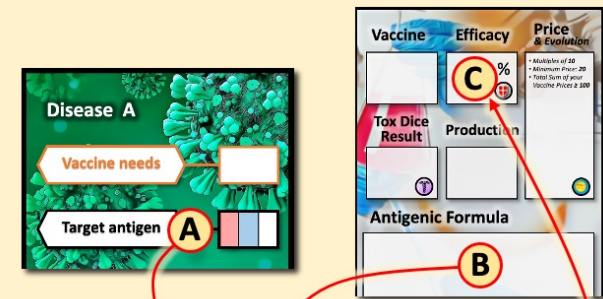
The vaccine efficacy is written in percentages (%) on the vaccine card (Fig.4). The player may then define the Tox model to use (see p.7). The quantity of vaccine units to produce and the Price will be defined during the next stages **2** & **3** (see p.8).

Figure 4. Example of calculation of vaccine efficacy



3 The Vaccine efficacy equals to 97%:
 $478 - 475 = 3 \Rightarrow 100 - 3 = 97\%$

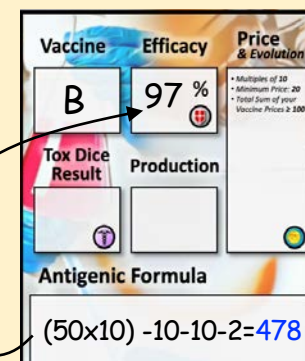
2 The Antigenic value of the vaccine equals to **478**



STEP 1*: **A** - **B** = Antigenic difference

STEP 2: 100 - Antigenic difference = **C**

*Note: if (A - B) is negative, calculate (B - A)



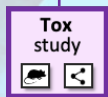
1 James develops an Antigenic Formula based on 5 reagents (50, 10, 10, 10, 2) and two technologies (X and -)



➤ Perform a Tox Study

Once a player has developed an Antigenic formula, a Tox study can be financed.

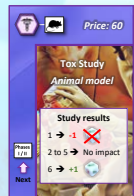
Note: A Tox study must be performed before initiating the Clinical studies.



The player may choose between **two types of Tox studies**: studies **based on animal models** and studies **based on in vitro models** .

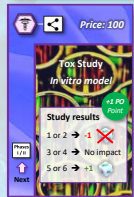
Tox studies based on *in vitro* models are more expensive and may generate less predictive results (see Note) but **confer 1 PO point**. +1 PO Point

After selecting the type of Tox study and paying the price to the bank, the player may roll the Tox dice (purple dice) to define the study result (Fig. 5). The Tox result may influence the execution of the PhI/II and PhIII studies according to the following rules:



▪ For a Tox study based on animal models :

- **On 1**: the player has to **remove** one clinical dice during the clinical testing.
- **On 2, 3, 4 or 5**: **no impact** on the execution of the clinical studies.
- **On 6**: the player **gains** one additional clinical dice during the clinical testing.



▪ For a Tox study based on in vitro models :

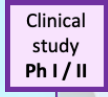
- **On 1 or 2**: the player has to **remove** one clinical dice during the clinical testing.
- **On 3 or 4**: **no impact** on the execution of the clinical studies.
- **On 5 or 6**: the player **gains** one additional clinical dice during the clinical testing.

Note: A Tox result of 1 means a weak prediction by the model of the vaccine safety profile in humans. A Tox result of 6 means a strong prediction by the model. The Tox result may be noted on the Vaccine card . The Tox result influences both Phase I/II and Phase III studies. A player may decide to repeat a Tox study based on the obtained result. The new Tox study will count as a new action. It may be performed during the same turn or during another turn.

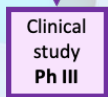


➤ Perform a clinical study

After the completion of a Tox study, a player has to sequentially finance a PhI/II study and a PhIII study. Financing a PhI/II study counts for one action, so does the financing of a PhIII study. The coins are given to the bank.



The clinical success of a clinical study is defined by rolling the clinical dice according to the following rules:



- Case 1: If **70% ≤ Vaccine efficacy < 80%** => roll **1 dice**
- Case 2: If **80% ≤ Vaccine efficacy < 95%** => roll **2 dice**
- Case 3: If **95% ≤ Vaccine efficacy** => roll **3 dice**

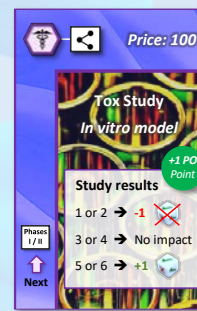
The clinical dice will determine the outcome of the clinical study. A study is successful if at least one check mark is obtained. In case of study failure (all red X), the study must be repeated with a new financing. It will count as a new action. It may be performed during the same turn or during another turn.



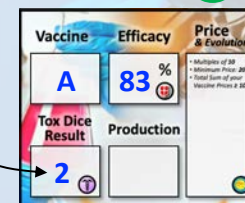
➤ Increase Production Capacity

A player may increase the Production Capacity of his (her) vaccine manufacturing facility by purchasing up to 2 additional units. The purchase of **2 units** counts as **one action**. The Production Capacity board of the player is immediately updated accordingly.

Figure 5. Example of a Tox study



- 1** Kate has financed a Tox study based on in vitro models. She gains 1 PO point. +1 PO Point

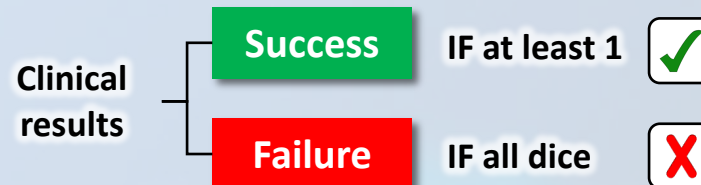


- 2** Kate rolls the Tox dice and obtains 2. She has to remove one clinical dice during the execution of her PhI/II and PhIII studies.



- 3** Kate will roll only one clinical dice instead of two dice for a vaccine with 83% of efficacy (see clinical study section).

Note: one clinical dice may be removed or added to the numbers of dice depending on the outcome of the Tox study (see Tox study section above). If the Tox result makes lose the only clinical dice that the player was planning to use (case 1), the clinical study cannot be performed and the player has to initiate a new Tox study.





➤ Launch a new vaccine on the market

Once a vaccine has been successfully validated in a PhIII study, it may be launched on the market. We refer it as a licensed vaccine. The player can put the vaccine card face-down in front of his/her confidentiality screen. The vaccine card will be revealed during the vaccine sale stage **3**. This action may be done at no cost.

Note: A Microscope token is awarded to each player who succeeds in launching a new vaccine. A player can own up to 3 Microscope tokens. Each token grants 5 Victory points.



➤ Remove a vaccine from the market

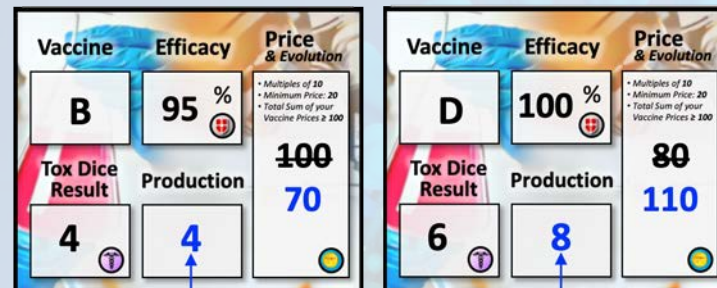
A player may voluntarily decide to remove a marketed vaccine to optimize it or to develop a new one. In case of optimization of the antigenic formula, the player may purchase additional reagents. New Tox and clinical studies must then be financed to launch the optimized vaccine.

B) Vaccine production allocation & Price adjustment (Stage 2)

When all the players have completed their actions, the players who have launched new vaccines or already owned licensed vaccines may secretly allocate their vaccine production units per vaccine (Fig. 6). The vaccine production units are allocated by writing the number of units in the "Production" case of the Vaccine cards **1**.

The players may also define or adjust the price of their vaccines by writing the information in the Price box of the Vaccine cards **2**. These Vaccine cards are then place face down on the market.

Figure 6. Example of vaccine production allocation between two licensed vaccines



2 Carla also decides to adjust the prices of her two marketed vaccines by writing 70 for the vaccine B and 110 for the vaccine D

1

Carla owns 12 Production units that she dispatches as 4 units on Vaccine B and 8 units on vaccine D



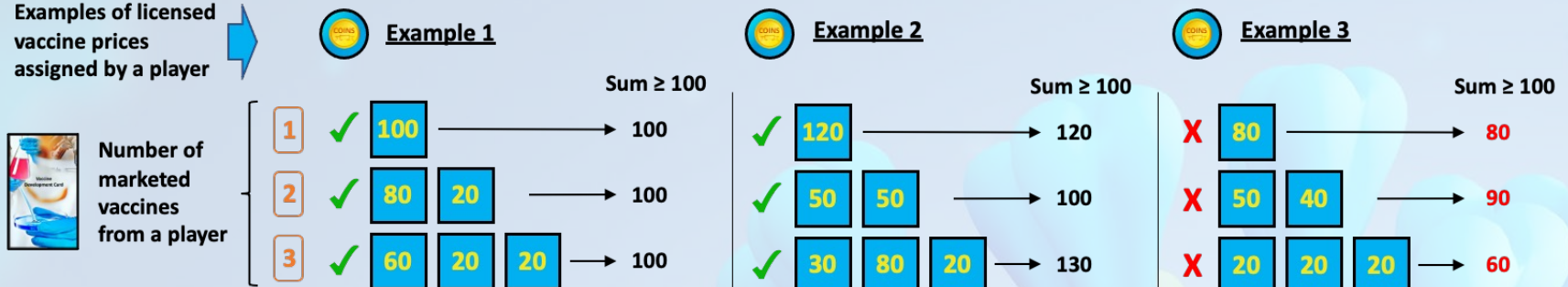
Vaccine Pricing Rules

The price of a vaccine must respect 3 rules:

- Be a multiple of 10
- Cannot be lower than 20 coins
- The sum of the vaccine prices marketed by a player must equal at least 100 coins (Fig. 7)

Figure 7. Examples of pricing strategies and their limitations related to the 3 rules

Examples of licensed vaccine prices assigned by a player



Note: The number of vaccines launched by a player influences his (her) pricing strategy. When only one vaccine is launched, the price cannot be lower than 100 coins. When two or three vaccines are launched, the player is free to adapt his (her) prices as long as the sum of the vaccine prices is equal or superior to 100 coins and the lowest individual price is equal or superior to 20 coins.

C) Vaccine sales (Stage 3)

All the players simultaneously disclose their licensed vaccines and the related production units and vaccine prices. Depending on the defined prices of their licensed vaccines, the players must adjust their PO levels accordingly before comparing their vaccines with other players and initiating any sales (see the Public Opinion section on p.10).

The VNs for a disease are addressed by the vaccine with the **best efficacy** (🏆) (“best-in-class Vaccine”). In other words, the vaccines with a lower efficacy (“inferior vaccines”) should be automatically withdrawn from the market (without counting the withdrawal as an action).

Comparison rules for competitive vaccines with equivalent efficacy

In case of **equivalent efficacy** (🏆) between vaccines targeting the same disease, the player offering **the lowest price** (👉) may sell his vaccine. In case of a tie, the company with **the highest PO score** (🟢) is selected for the sale. In case of equivalent PO, the vaccine with **the highest Tox score** (🟣) is selected for the sale. If the tie remains, the players may draw the Tox purple dice. The highest result will determine the best-in-class vaccine.

Each player who succeeds in launching a best-in-class vaccine can collect a **Microscope token** that is worth 5 Victory Points.

Note: the vaccines with equivalent efficacy that cannot be sold can stay on the market but without generating any Immunization points (“pending vaccines”). The player(s) may decide to adjust their Price and PO score during the following turns to win future bids.

A player who launches a “pending vaccine” can collect a Microscope token. “Inferior vaccines” do not grant any Microscope tokens.

In the case of “Combo” vaccines, the comparison rules apply for each targeted disease. In other words, it may happen that a combo vaccine represents the best-in-class vaccine for one disease while being less competitive for the other disease. In this case, the player may count immunization points only based on the sales of its best-in-class vaccine (see the Combo vaccine section on p.11).

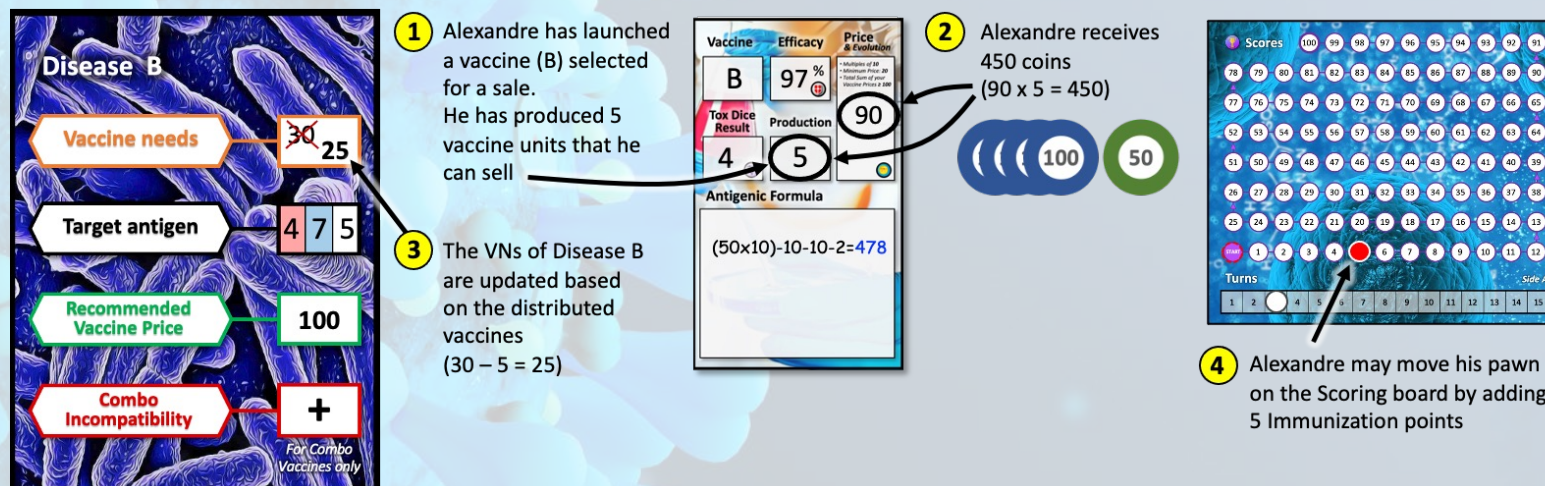


After identifying the best-in-class vaccines for each disease, the **vaccine sales** can occur as follows (Fig. 8):

The amount of the sale is calculated by multiplying the number of vaccine units (1) by the price defined by the player (2). The VNs of the disease are then adjusted by subtracting the number of vaccines distributed (3).

Each player may sum the number of vaccines sold (Immunization points) and move their pawns on the Scoring board accordingly (4).

Figure 8. Example of a vaccine sale



Note: In case the number of vaccine units produced by a player is superior to the VNs of a disease, the amount of the sale is calculated based on the remaining VNs of the disease.

A disease with VNs reaching zero is considered as eradicated and removed from the game.

All the licensed vaccines that were targeting this disease are automatically removed from the market (without counting as an action).

The game turn ends. The pawn of the Turn counting board is moved to the next turn to initiate a new game turn.

SPECIAL FEATURES

PO The Public Opinion (PO)

The Public Opinion level represents the reputation of your Company and is monitored with the PO scale. The pricing strategy applied by a player influences the PO level. This PO level is proportionally impacted by the **Launch Price** of a vaccine and **its evolution** during the game.

At launch, the **Recommended Price (RP)** mentioned on the Disease card represents the reference. If a player decides to launch a vaccine at a lower price than the RP, (s)he wins 1 PO point per level of 10. Inversely, if (s)he decides to launch a vaccine at a higher price than the RP, (s)he loses 1 PO point per level of 10 (Fig. 9)

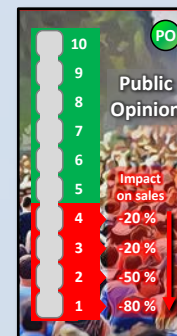
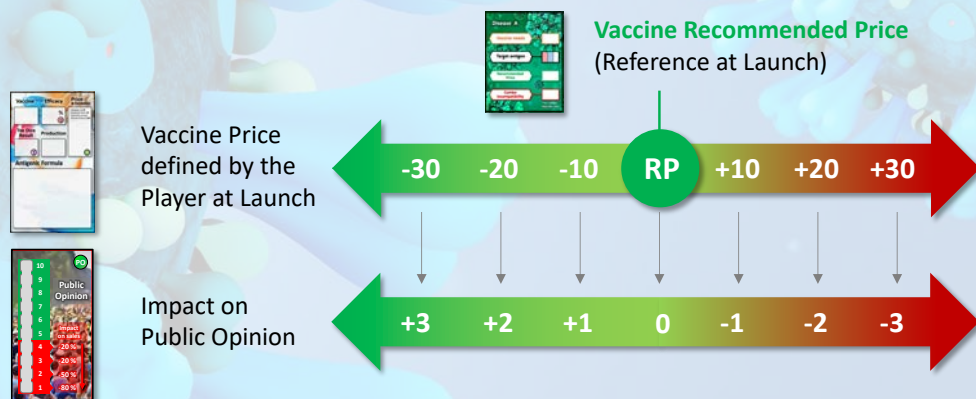


Figure 9. Determination of the PO impact based on the Launch Price of a vaccine



PO impact on sale performances

When the PO level decreases below 5, the sale performances are impacted as follows:

- PO level = 4 or 3 => **-20%** of the sales
- PO level = 2 => **-50%** of the sales
- PO level = 1 => **-80%** of the sales

A table of percentages and the related impact on the vaccine sales is shown in Table 1.

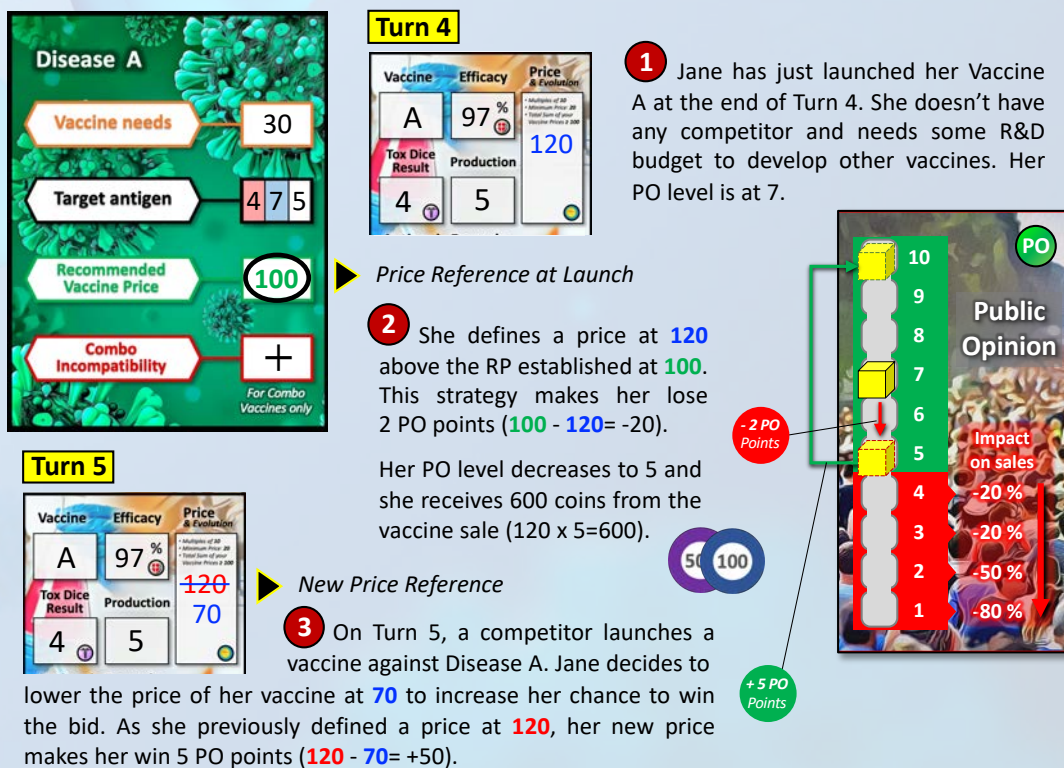
Table 1. PO impact on vaccine sales

Number of vaccine units on sale	Sale decrease percentage		
	- 20%	- 50%	- 80%
1	-1 (0)	-1 (0)	-1 (0)
2	-1 (1)	-1 (1)	-2 (0)
3	-1 (2)	-2 (1)	-3 (0)
4	-1 (3)	-2 (2)	-4 (0)
5	-1 (4)	-3 (2)	-4 (1)
6	-2 (4)	-3 (3)	-5 (1)
7	-2 (5)	-4 (3)	-6 (1)
8	-2 (6)	-4 (4)	-7 (1)
9	-2 (7)	-5 (4)	-8 (1)
10	-2 (8)	-5 (5)	-8 (2)
11	-3 (8)	-6 (5)	-9 (2)
12	-3 (9)	-6 (6)	-10 (2)
13	-3 (10)	-7 (6)	-11 (2)
14	-3 (11)	-7 (7)	-12 (2)
15	-3 (12)	-8 (7)	-12 (3)
16	-4 (12)	-8 (8)	-13 (3)
17	-4 (13)	-9 (8)	-14 (3)
18	-4 (14)	-9 (9)	-15 (3)
19	-4 (15)	-10 (9)	-16 (3)
20	-4 (16)	-10 (10)	-16 (4)

Number of vaccine units lost; Number of vaccine units that may be sold

After the launch, the Vaccine Price defined by the player during the previous turn represents the reference. If the player decides to lower his (her) price, (s)he wins 1 PO point per level of 10. Inversely, if (s)he decides to increase his (her) price, (s)he loses 1 PO point per level of 10 (Fig. 10)

Figure 10. Example of a pricing strategy and its impact on the PO level





Inaction Penalty

The Public expects that a Company actively fights diseases by launching at least one new vaccine each turn. The Companies that do not meet this expectation are sanctioned by an "Inaction Penalty" (-1 PO Point / turn). In other words, each Company that ends a turn without launching a new vaccine loses 1 PO point. The penalty is waived for the Companies that have launched their 3 vaccines on the market.

-1 PO Point

❖ Development of "Combo" vaccines

A "Combo" vaccine is a vaccine protecting against several diseases at the same time, in comparison with a single vaccine that targets only one disease. The development of a "Combo" vaccine must respect the following rules (Fig. 11):

- **Only two diseases** may be targeted at the same time.
- The **TA** to consider for the antigen design is **chosen by the player**.
- The **RP** for the "Combo" vaccine is the **highest one** between the two prices associated with each disease
- The **antigenic formula cannot contain any sign** displayed in the "Incompatibility" boxes of both targeted diseases.

Note: some diseases may not have incompatibility signs and may be combined without restriction in the development of the antigenic formula. The other rules still apply.

During the vaccine sales **3** (see p.9), one vaccine unit of a "Combo" vaccine is counted twice for the sale calculation and for the number of immunization points. The vaccine needs of each disease are then updated by subtracting the vaccine units sold.

Note: a player may decide to optimize a single vaccine into a combo vaccine. If the single vaccine has been already launched, the player must remove the vaccine from the market to be able to change the antigenic formula (if necessary). Then, the Tox and clinical studies must be repeated to allow the launch of the "Combo" vaccine on the market.

❖ Description of the Technologies & Expertise

Sixteen types of Technologies & Expertise (T&E) are available to the players. Each T&E card confers specific abilities and advantages in the Vaccine Development process (see symbol in the upper right corner of each card). The T&E cards may be used each turn (except if it is mentioned "for one vaccine only"). The T&E cards with a price are purchased via a one-time payment to the bank.

Note: The T&E are immediately active after purchase (e.g., the player acquiring the High-throughput screening card immediately receives two free reagents of his (her) choice ; the acquisition of the Global Health card immediately confers an extra PO point).

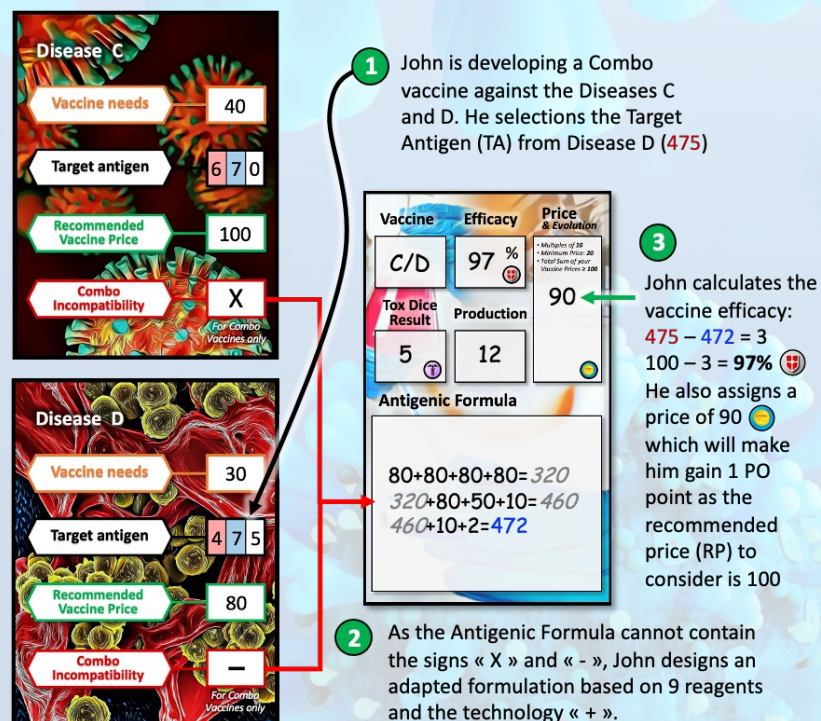
• Basic Technologies



➤ Technologies [+] [-] [x] [÷]

These technologies allow the development of antigenic formula. Their combination can be useful to improve the vaccine efficacy. The technology [+] is available by default (free of charge). The others need to be purchased.

Figure 11. Example of development of a "Combo" vaccine



- **Technologies & Expertise conferring specific abilities**



➤ **Techno “High-throughput screening”**
 This technology allows a player to obtain two reagents (of any type) at no cost each turn.



➤ **Techno “Combo development”**
 This technology allows a player to develop one “combo” vaccine by bypassing the incompatibility constraints.



➤ **Techno “Digital Manufacturing”**
 This technology allows a player to purchase up to 3 Production units per action (instead of 2) to increase his/her manufacturing capacity.



➤ **Techno “Rapid Response Platform”**
 This technology allows a player to waive the Tox evaluation. The vaccine platform has been consistently demonstrated as safe and can be granted a Tox score of 4 by default. The player is not obliged to use this techno during vaccine development.



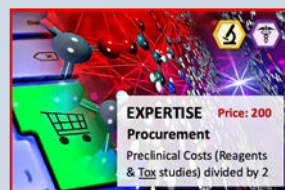
➤ **Techno “Predictive Modeling”**
 This technology allows a player to roll the Tox dice twice and to select the highest score. This technology can be used every time a player finances a Tox study (in vitro or animal models).



➤ **Expertise “Supply Chain Management”**
 This expertise allows a player to immediately gain 2 Production units and to expand the production capacity of his/her manufacturing facility with 6 additional units (maximum capacity=24 units). However, the player still needs to purchase the production units to reach this extra level of Production capacity.



➤ **Expertise “Clinical trial management”**
 This expertise allows a player to re-roll the clinical dice one more time in case of study failure. This technology can be used every time a player finances a PhI/II or PhIII study.



➤ **Expertise “Procurement”**
 This expertise reduces by half the cost of any preclinical activities such as the purchase of reagents and the financing of Tox studies. However, the cost of the Clinical studies remains unchanged.



➤ **Expertise “Global Health”**
 This expertise means that your Company is committed to support immunization campaigns in developing countries. Your engagement for the most vulnerable populations is recognized by the Public through the gain of 1 PO every turn.



➤ **Expertise “Quality by Design”**
 This expertise allows a player to increase the vaccine efficacy by 5% for one vaccine only.



➤ **Expertise “Structural Biology”**
 This expertise allows a player to use an exclusive reagent of a value equal to 3. This reagent can be used indefinitely in the vaccine formulas without extra cost.



➤ **Expertise “Regulatory”**
 This expertise means that your Company has mastered the regulatory procedures required to launch new vaccines. Any launch can be performed without counting as an action.

END OF THE GAME

The game may end in 3 different manners:

- (1) When all the diseases are eradicated ;
- (2) When the last turn is completed on the Scoring Board;
- (3) When a player reaches the maximum number of immunizations on the Scoring Board.

The winner is the player with the highest number of Victory Points (VPs).

The **Victory Points** owned by a player are calculated by adding the following scores:

- The **number of Immunization Points** (1 Immunization Point = 1 VP)
- The **number of licensed vaccines** (1 licensed vaccine = 1 **Microscope Token** = 5 VPs)
- The **number of T&E cards** owned at the end of the game (1 T&E card = 2 VPs)
- A **Public Opinion score** equals to 9 or 10 grants 5 VPs

Note: In case of a tie, the player with the highest Public Opinion wins the game. If it is still tied, the player with the most Microscope tokens wins the game.

IMMUNIZATION GAME VARIANTS



The “Quick competitive” version

Unlike the normal version where the Technologies & Expertise (T&E) cards are purchased from the market during the game, the Quick version of Immunization starts with the **pre-assignment of the T&E cards to each player**. The basic **Technologies “+” and “X”** are **automatically assigned** to each player. The rest of the T&E cards can be randomly distributed to each player or the players can take turn selecting their cards one by one to constitute the profiles of their companies.

The **side B of the Scoring Board** is used with **8 turns** instead of 15. Besides, the players start the game with an **R&D Budget of 2000 coins**.

Another particularity of the quick version is that **the players may perform their 3 actions together at the same time** during the Action stage. The Action stage ends when all players have completed their actions. Each player may announce the 3 actions they performed. The rest of the game turn is similar to the one in the normal version.



The undisclosed chronic disease

During the preparation of the Disease boards at the beginning of the game, **one Disease board** is set aside to be **prepared only at the Turn 7 (in a “Normal game” version) or at the Turn 4 (in a “Quick game” version)**. This undisclosed disease represents a chronic disease that will emerge during the middle of the game. This game variant brings even more strategy notably by creating more opportunities to optimize some licensed vaccines into new “Combo” vaccines.



The Cooperative Mode

If you prefer to fight diseases in a collaborative way, Immunization can be played in a cooperative mode by forming a coalition. In this configuration, the players openly develop their vaccines together to eradicate the diseases before they spread around the globe.

Although the competitive mode is better to fully appreciate the various strategic components of the Immunization game, the cooperative mode is a good approach to familiarize yourselves with the game mechanics and to enjoy a team work experience.

GAME SET-UP

The Game setup in a cooperative mode is the same that the competitive version (see p.3) except for the following points:

- The **confidentiality screens** are removed.
- The players start with an **R&D Budget of 2000 coins**.
- Each player receives the **Technologies [+] and [x]**. The remaining [+] and [x] T&E cards (if any) are removed from the deck. The rest of the T&E cards is then shuffled, and **3 additional T&E cards** are distributed per player.
- The **side B of the Scoring Board** is used to count the turns. No needs to count the immunization points as the objective is to eradicate all the diseases before the end of the 8th turn.

GAME PLAY

The Game play in a cooperative mode is the same than with the competitive version (see p.3) except during the stage of the vaccine sales. In the “cooperative” mode, several vaccines can target the same disease without competing for the sales. In other words, the principle of “best-in-class” vaccines and the comparison rules do not apply.

Note: During a cooperative game, the players may use the Microscope tokens to identify the diseases for which they are developing a vaccine. By marking their targets, the players can better coordinate their effort to eradicate all the diseases before the end of the last turn.



Solo Mode

Immunization can be also played in solo with the same setting and objective that the cooperative mode. Two to 3 Disease Boards can be used.

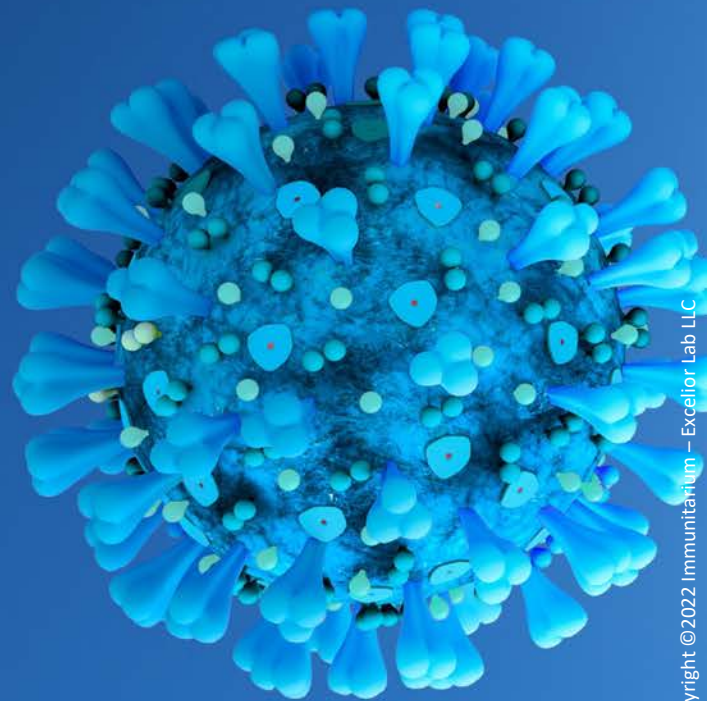
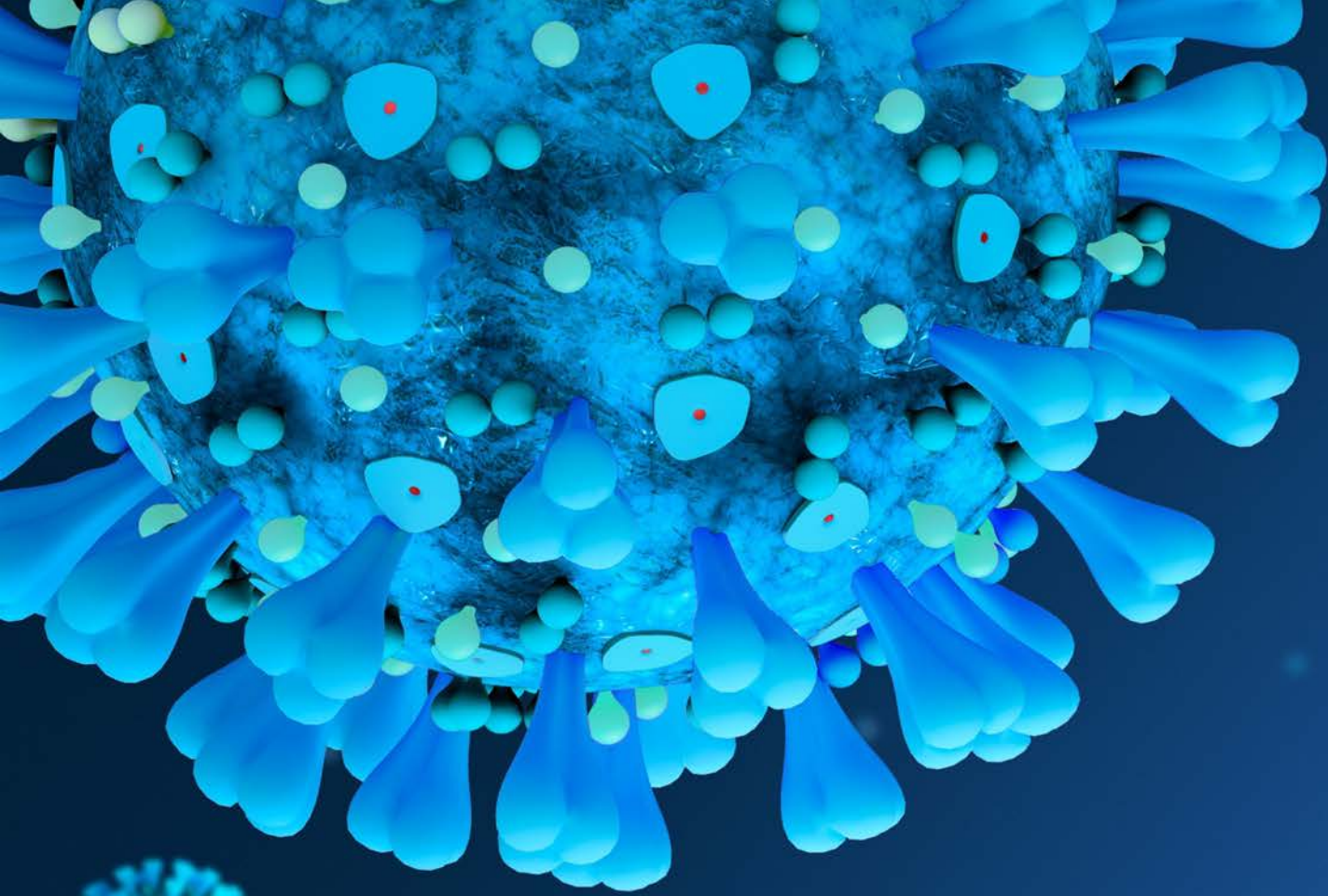


Tips for Beginners

We recommend you to play **your first Immunization game** with the **cooperative mode and without** including the “**Combo**” vaccines to familiarize yourself with the basics. You can then level up the game experience by playing a “**Quick competitive**” version with the “**Combo vaccines**” feature. You will be then equipped with all the skills to enjoy the full potential of Immunization whatever your favorite game configuration!

Credits

- **Game concept & design:** Dr. Delahaye - Anero
- **Edition:** Excelior Lab LLC
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- **Production:** MagiCraft – China
- **Illustrations** adapted from Pixabay pictures and Freepik pictures
- **Special thanks** to all our testers and early believers



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