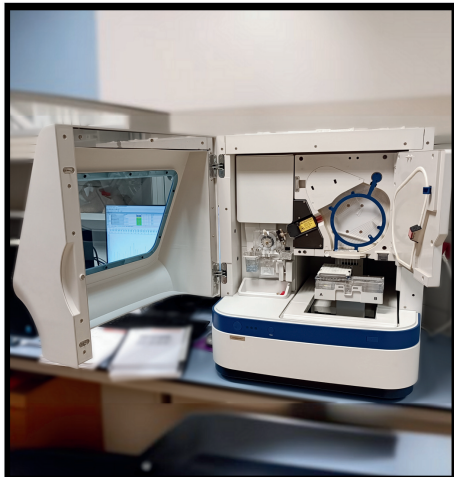


First generation

Generation progress card

1



You can play *Species cards* of the **first** generation.



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Second generation

Generation progress card

2



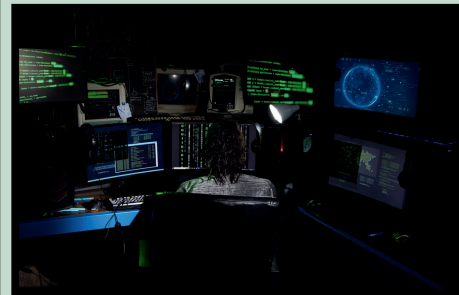
You can play *Species cards* of the **first and second** generations.



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Cyberattack

Event card



Play **Cyberattack** on top of a *Species card* and only once per game.

When **Cyberattack** is played and at the start of every turn, discard the *Species card* beneath and move **Cyberattack** to an adjacent *Species card*.

Password: 1234

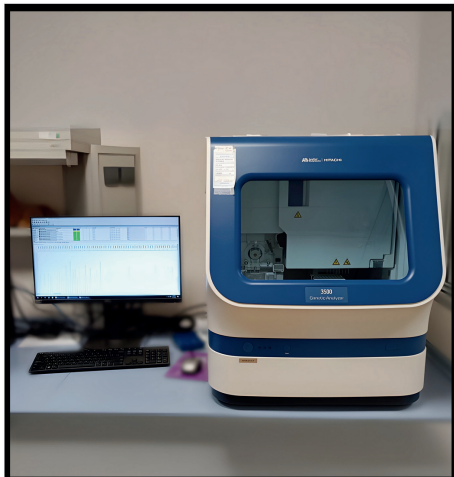


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First generation

Generation progress card

1



You can play *Species cards* of the **first** generation.



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Third generation

Generation progress card

3



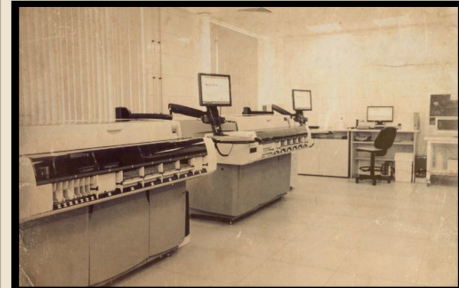
You can play *Species cards* of the **first, second and third** generations.



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Discontinued technology

Event card



Play **Discontinued technology** on the table and choose a sequencing generation.

While **Discontinued technology** is in game, new *Species cards* from the selected generation cannot be played.

A cutting-edge machine has dropped, rendering all previous technology obsolete.

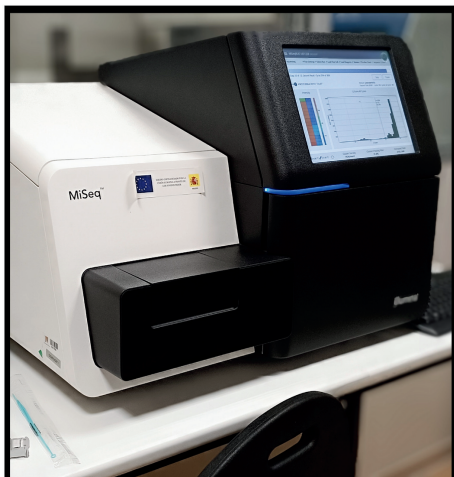


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Second generation

Generation progress card

2



You can play *Species cards* of the **first and second** generations.



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Third generation

Generation progress card

3



You can play *Species cards* of the **first, second and third** generations.



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Extinction

Event card



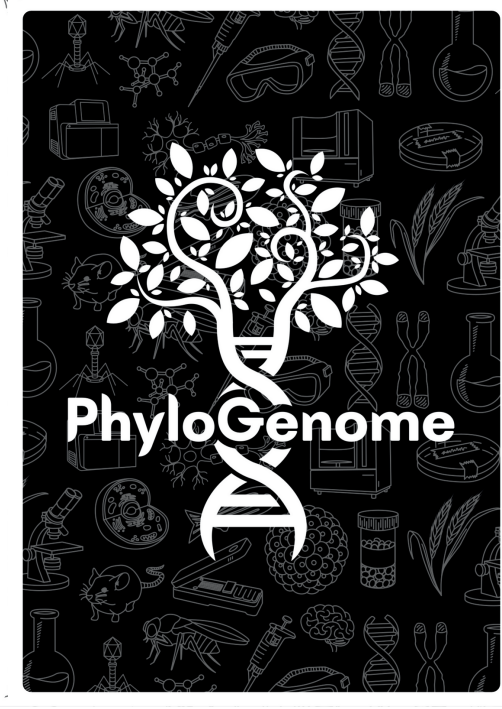
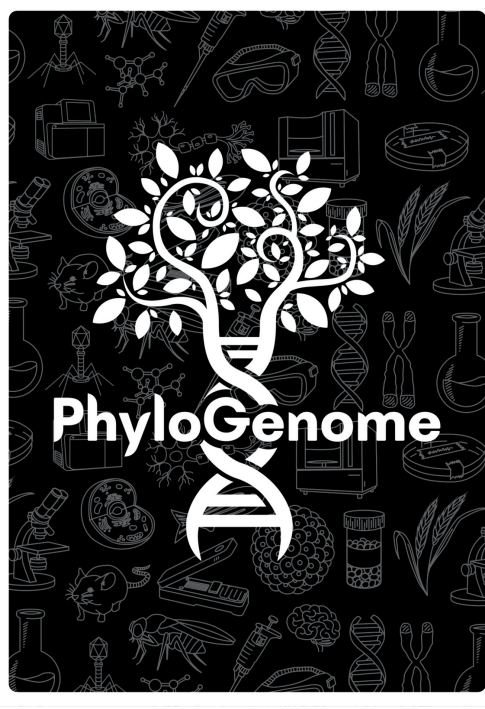
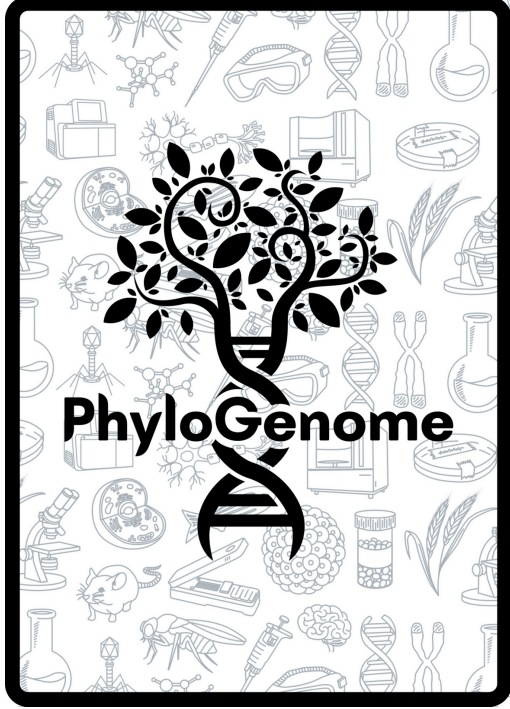
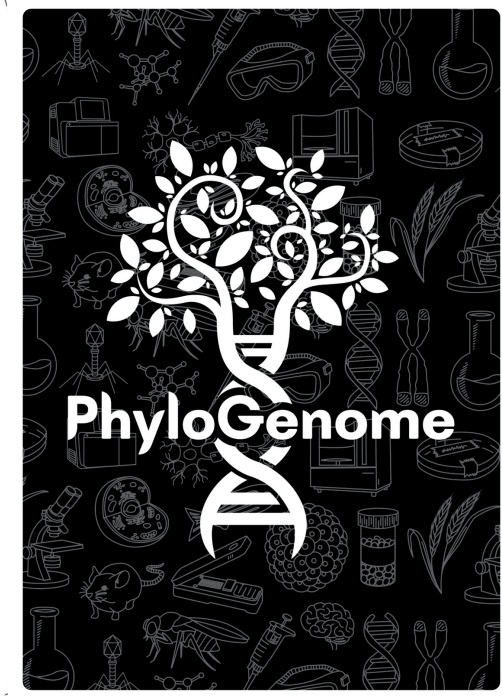
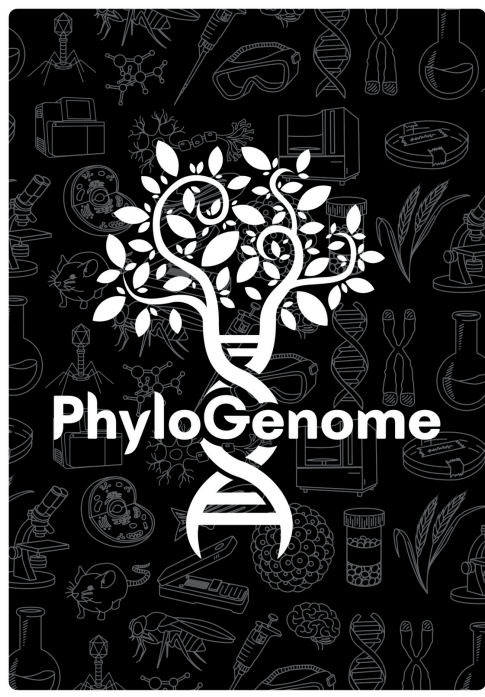
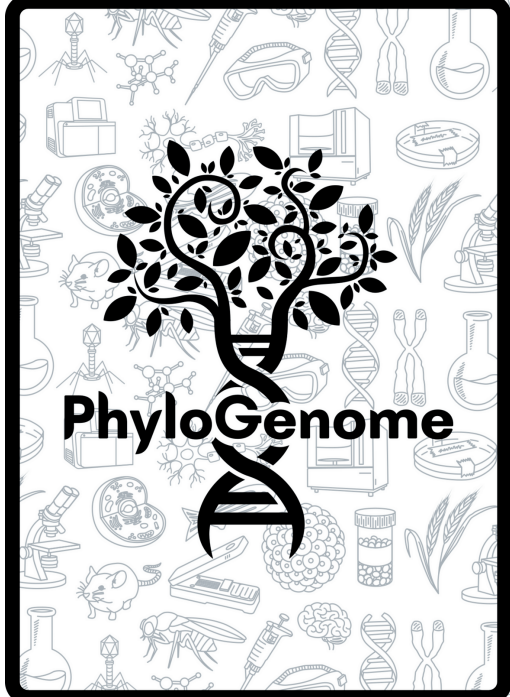
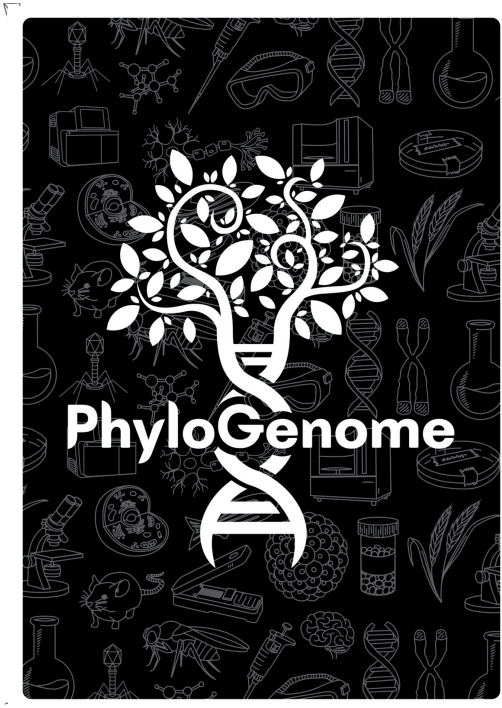
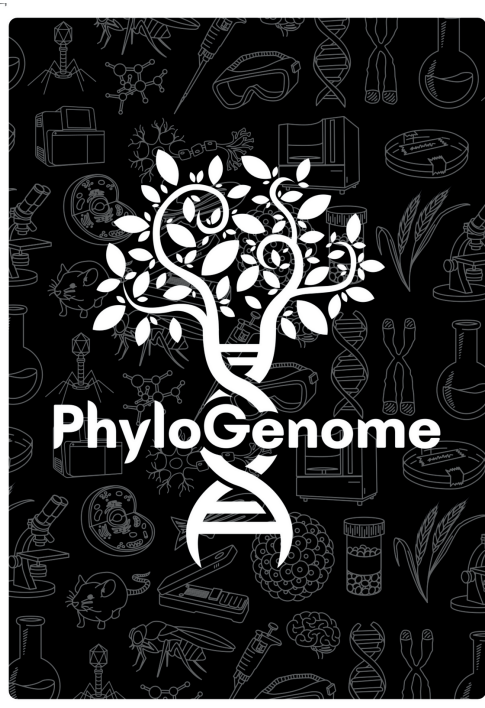
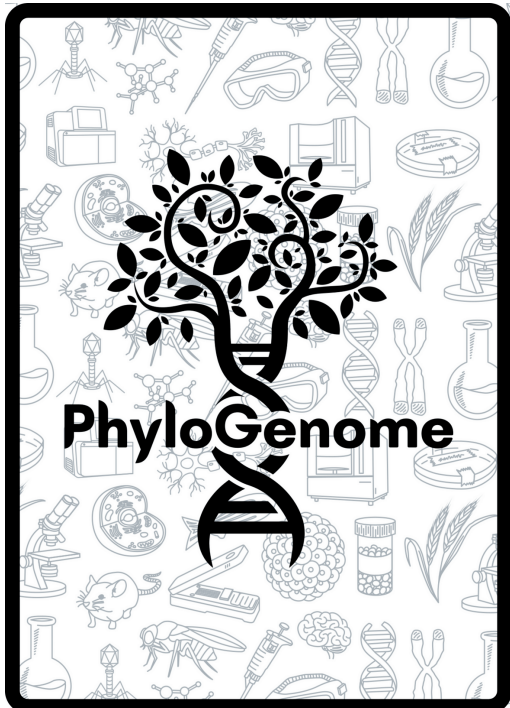
Play **Extinction** on top of an *Extinction risk Species card*.

Discard the *Species card* beneath **Extinction**.

All the work put into the conservation of this species has been in vain. Scientists are profoundly disheartened, to the point where they don't even feel like getting out of bed.



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Financial cut

Event card



Play **Financial cut** beneath a *Species* card.

New *Species* cards cannot be played adjacent to the *Species* card on top of **Financial cut**.

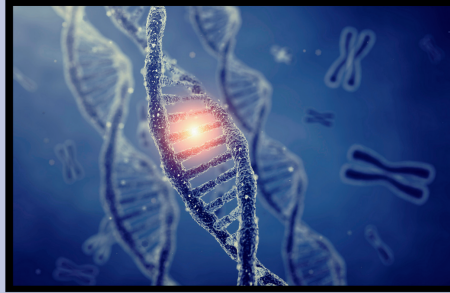
A groundbreaking discovery has recently captured the scientific community's focus. All ongoing research on this species is postponed.



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Mutation

Event card



Play **Mutation** on top of an *Evolutionary interest Species* card.

Discard the *Species* card beneath **Mutation**.

Pollution and ultraviolet radiation have led to a significant accumulation of mutations in this species. Consequently, it is no longer suitable for comparison with its close relatives.



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Pharmaceutical industry

Event card



Play **Pharmaceutical industry** on top of a *Drugs production Species* card.

Discard the *Species* card beneath **Pharmaceutical industry**.

A new drug has been produced. It works just as well as the old one, but at double the price and with an extended patent. Everybody wins!



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Fundings

Event card



You may only play **Fundings** if you have at least 5 *Species* cards facing you.

Discard an *Event* card in game.

Don't know how to solve a problem? Money can often pave the way to solutions. However, no one will part with their money unless you prove your value. So, keep striving!



UAB Universitat Autònoma de Barcelona Facultat de Biociències

Nobel prize

Event card



Play **Nobel prize** after a player has played an *Event* card.

Discard the previously played *Event* card without carrying out its effect.

As a Nobel Prize winner, you'll find that people follow you unconditionally. If you express disagreement, they'll likely do the same! Just remember to maintain your distinguished shine.



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Plague

Event card



Play **Plague** on top of a *Crops Species* card.

Discard the *Species* card beneath **Plague**.

A new invasive organism has been attacking crops all over the country and it is resistant to all pesticides. The most clever solution is to develop a broad-spectrum pesticide!



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International conference

Event card



Play **International conference** on a *Species* card and then discard it.

Move a *Species* card to any compatible position.

You have been invited to an international conference with all expenses fully covered; feast on the free food and drinks. Maybe you can also attend a seminar if you have spare time.



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Out of order

Event card



Play **Out of order** in front of a player.

The player with **Out of order** cannot play any *Species* cards. Discard **Out of order** at the beginning of your next step.

The machines have broken down and will not be repaired until next Monday. Take the opportunity to relax. When was the last time you took a vacation?



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Power outage

Event card



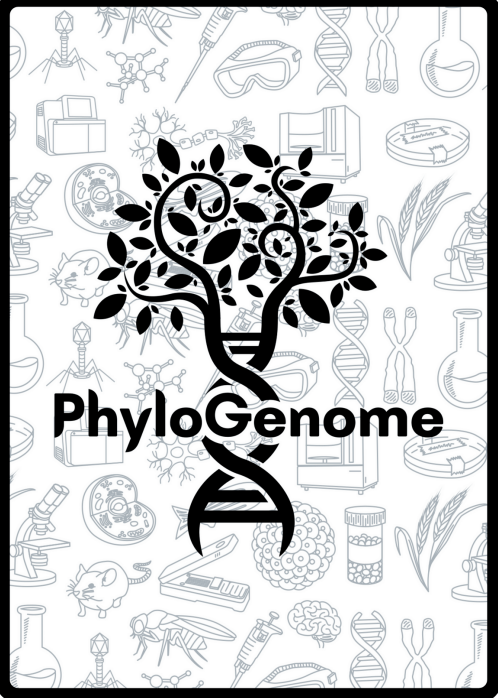
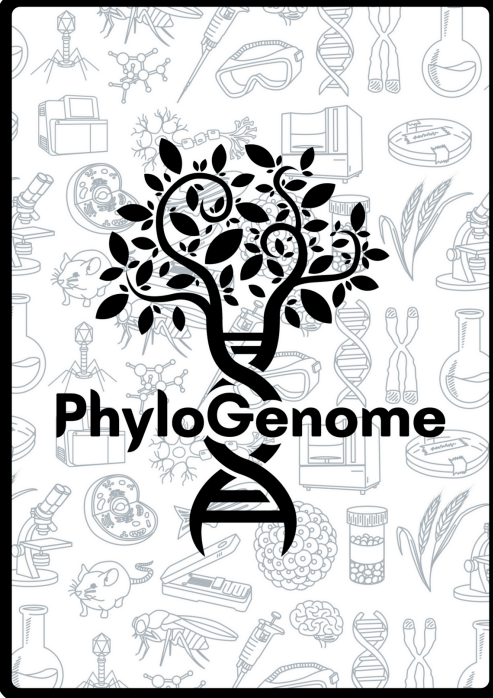
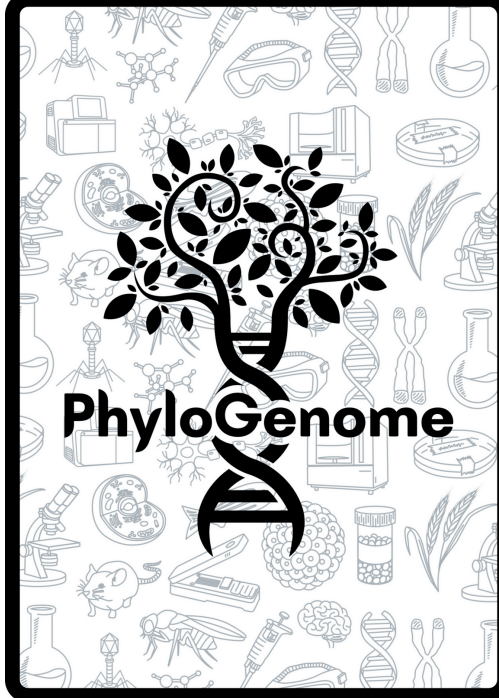
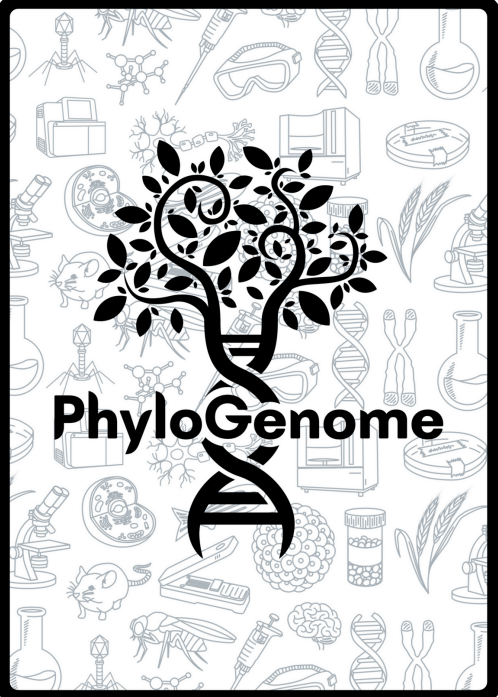
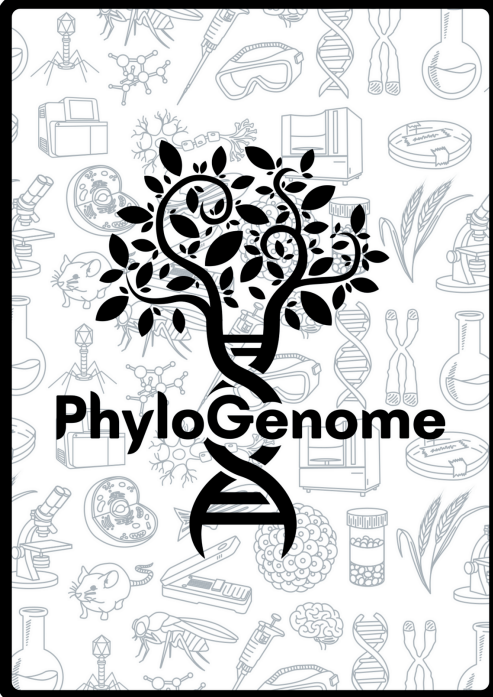
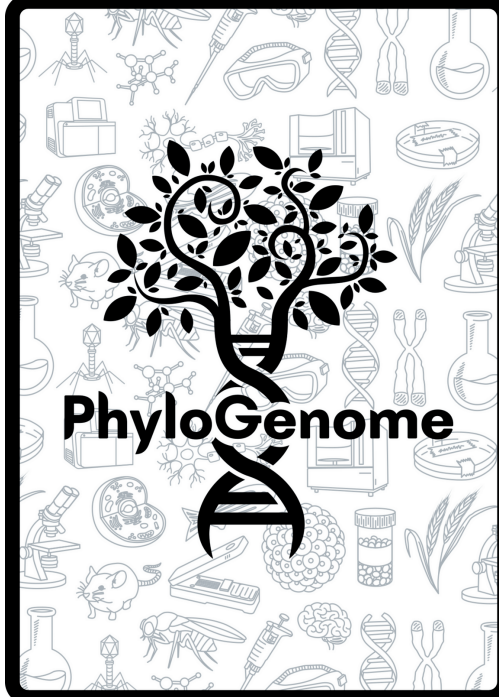
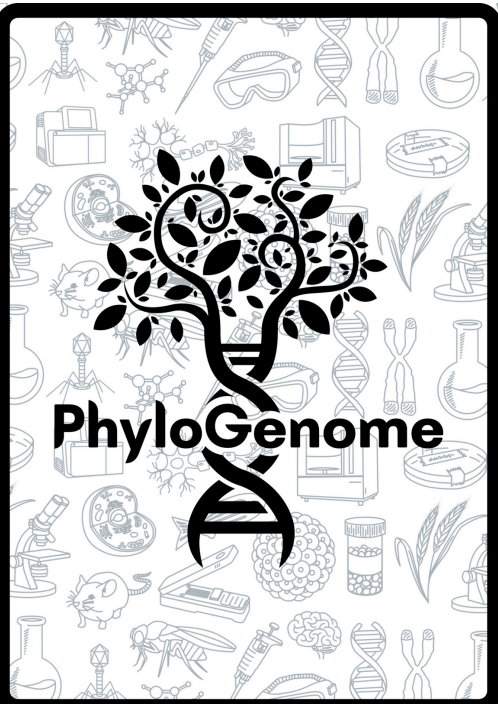
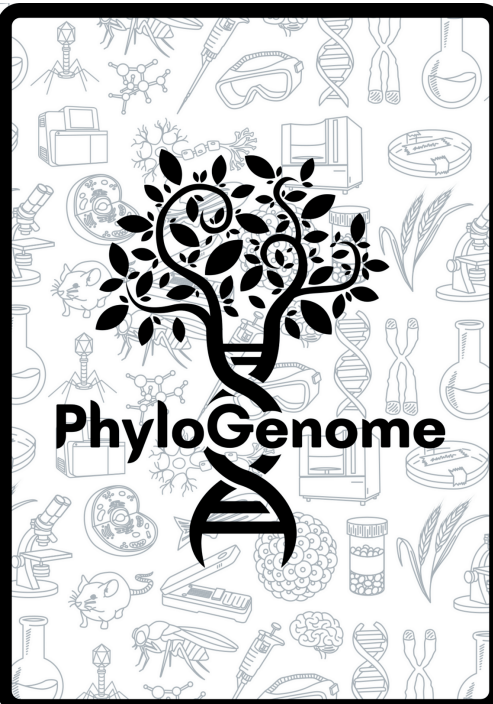
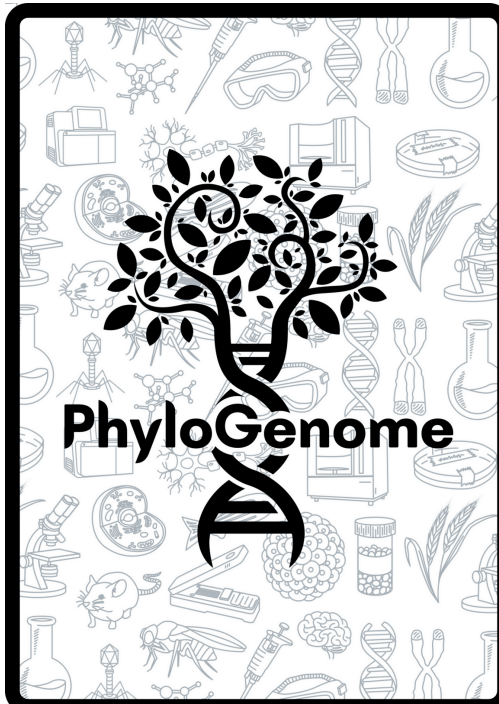
Play **Power outage** on top of a *Food production Species* card.

Discard the *Species* card beneath **Power outage**.

A storm has plunged the entire region into darkness, causing all factory production to fail. If only someone had considered setting up an emergency power supply.

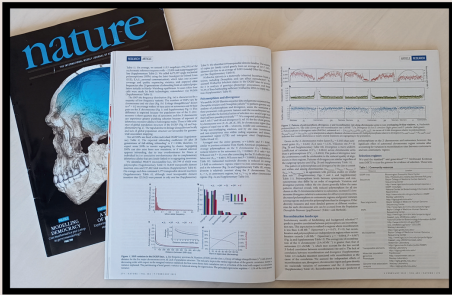


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Publication

Event card



Play **Publication** beneath a *Species card*. Double the points given at the end of the game by the *Species card* on top of **Publication**.

Because of the scientific significance of this species, you submitted a paper to a high impact journal, and they accepted it! However, not without ten revisions and fourteen corrections.



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Re-sequencing

Event card



Choose a *Species card* from the discard pile of any player and place it in play in a compatible spot. Play **Re-sequencing** beneath that *Species card*.

The sequencing generation of the *Species card* on top of **Re-sequencing** is increased by one.

Improved formula.



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Scientific collaboration

Event card



Choose a *Species card* from your hand. Your opponent shuffles all the *Species cards* in their hand. You then choose a random card from their hand, add it to your hand, and give the chosen card from your hand to your opponent.

The real treasure is the friends we made along the way.



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Rejected manuscript

Event card



Play **Rejected manuscript** beneath a *Species card*.

The *Species card* on top of **Rejected manuscript** does not give any points at the end of the game. *Sequencing generation* and *special points* still apply.

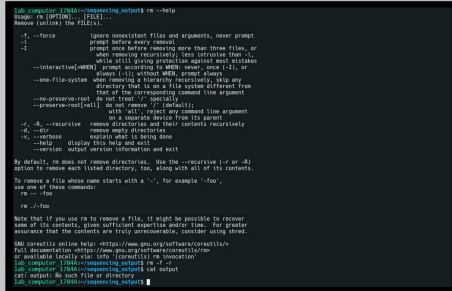
The journal has determined that your manuscript is not yet suitable for publication.



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rm -f -r

Event card



Discard any card from your hand. Play **rm -f -r** on top of a *Species card*.

Discard the *Species card* beneath **rm -f -r**.

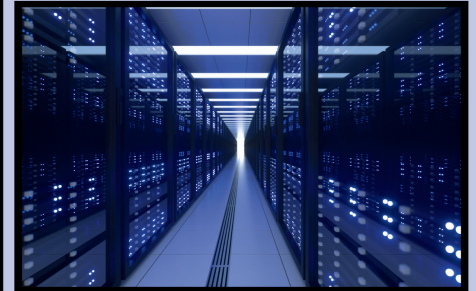
Error: No such file or directory.



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Servers down

Event card



Play **Servers down** beneath a *Species card*.

The *Species card* on top of **Servers down** cannot move until **Servers down** is discarded.

Someone unplugged the wrong cable. Hopefully you saved your work recently.



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Research

Event card



Play **Research** beneath a *Species card*. The *Species card* on top of **Research** can now jump. If the *Species card* is moved, **Research** moves with it.

Recent studies suggest that this species shares a common ancestor with humans from 10 million years ago. Evolution works in weird ways... Meanwhile, we must investigate more about it!



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Sample contamination

Event card



Play **Sample contamination** on top of a *Species card*.

Discard the *Species card* beneath **Sample contamination** and draw cards from the deck of its owner until you draw a *Species card*. Put it on the discarded position and discard the rest.

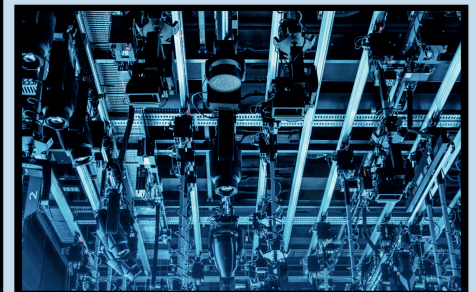
Who left the window open?



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Technological advancement

Event card



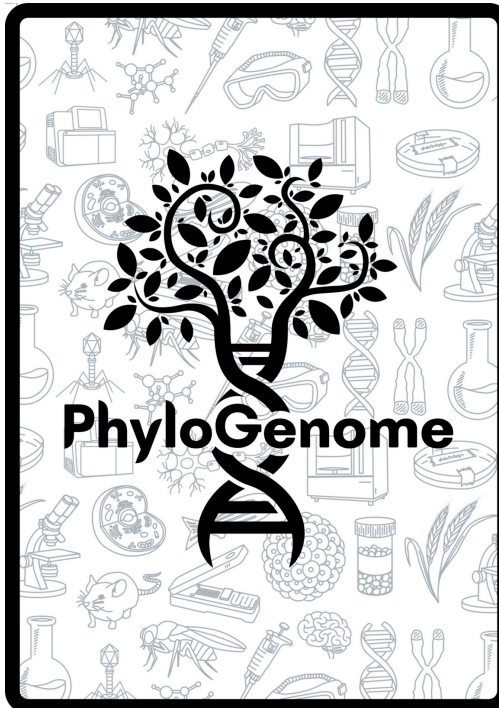
Place **Technological advancement** on the table until it is discarded.

Progress to the next sequencing generation.

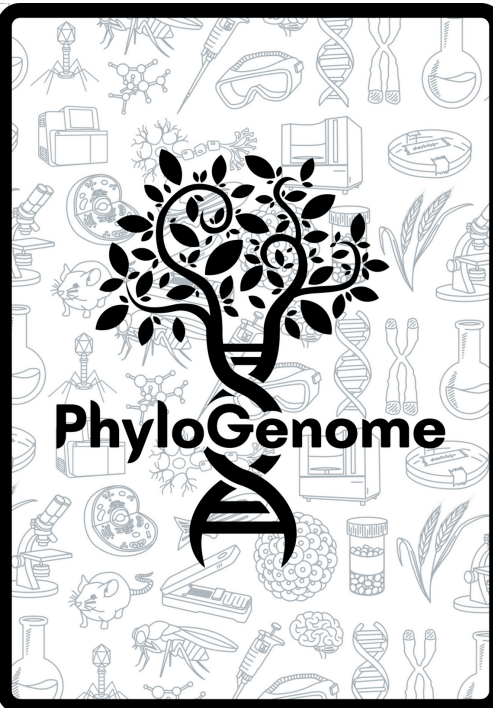
Ride the wave of innovation for a leap into a brighter tomorrow. This is not just a card; it's a ticket to the future. Embrace the unknown, as right now, more than luck - you need an edge.



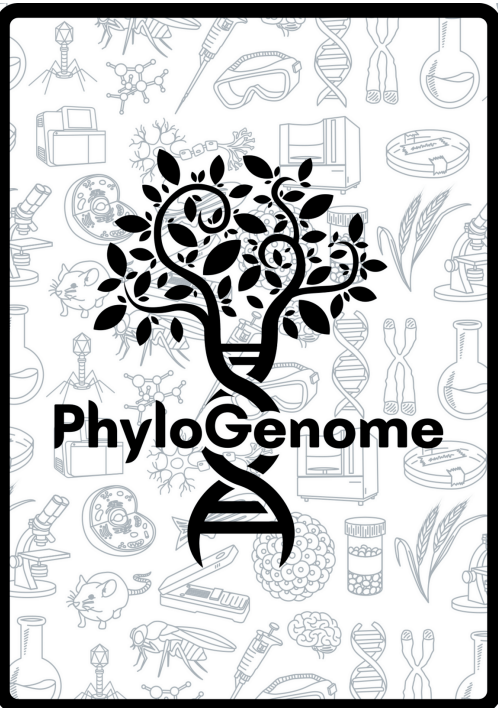
UAB Universitat Autònoma de Barcelona Facultat de Biociències



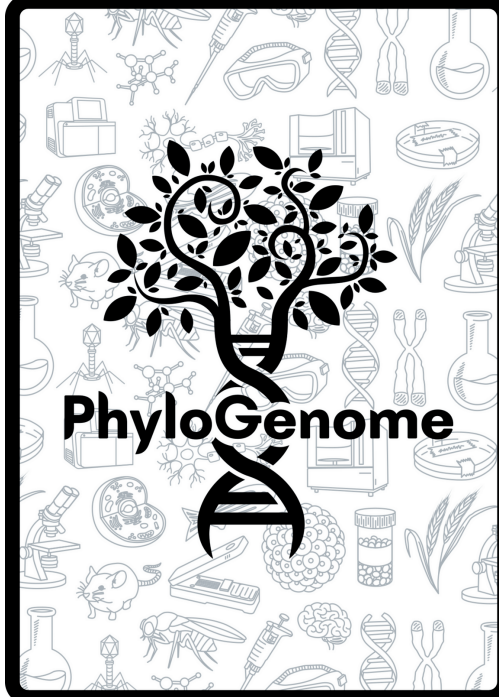
PhyloGenome



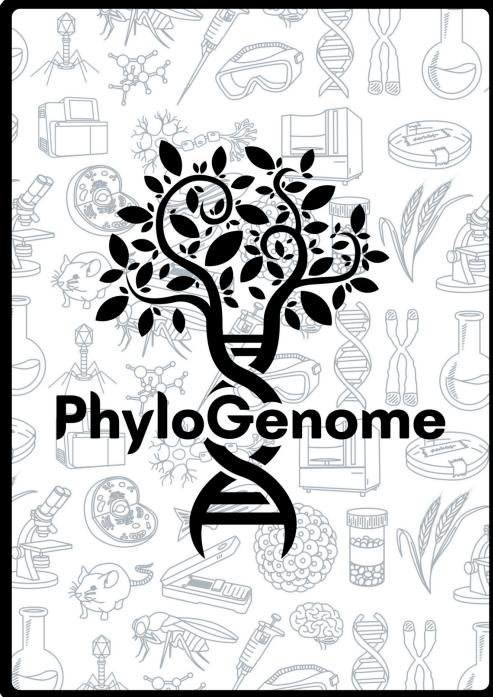
PhyloGenome



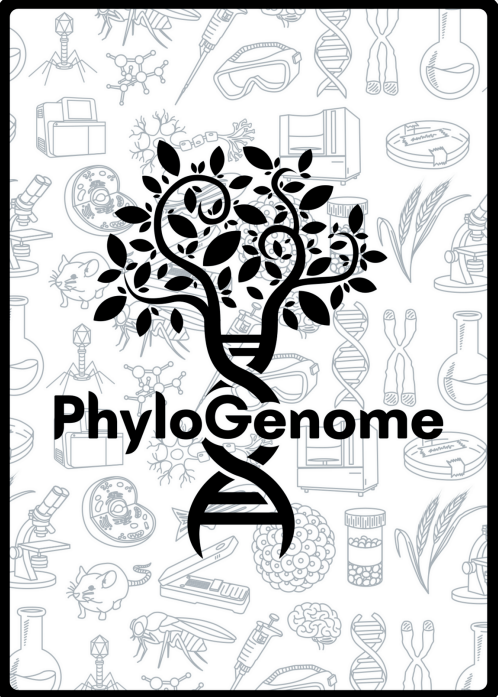
PhyloGenome



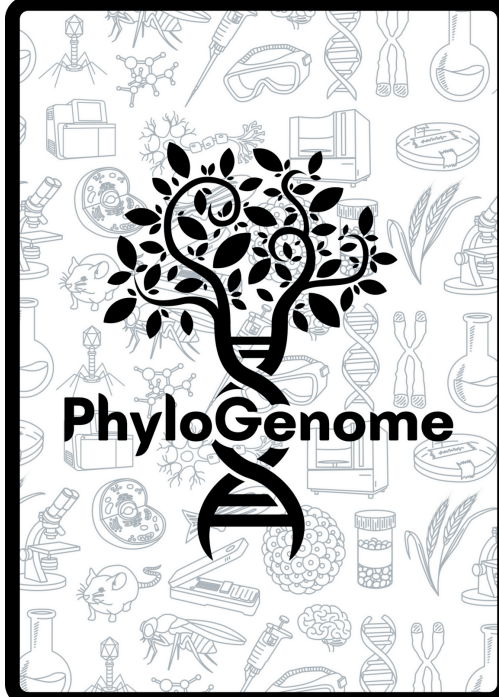
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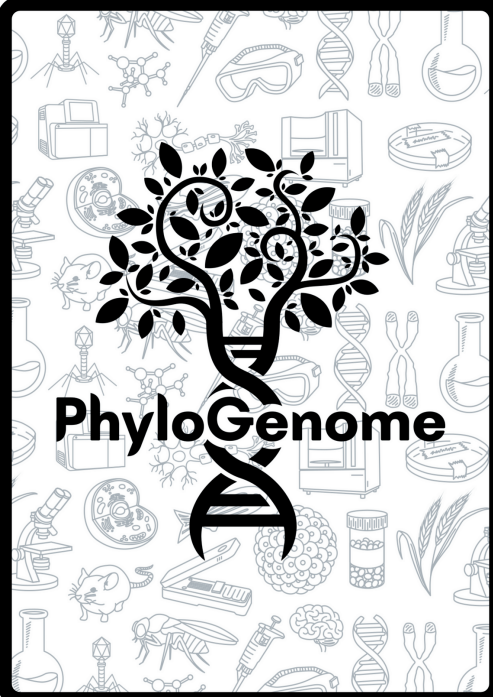
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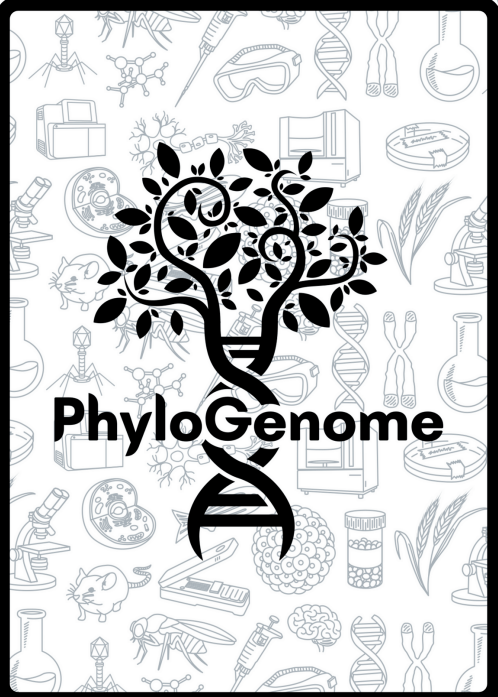
PhyloGenome



PhyloGenome



PhyloGenome



PhyloGenome

Vaccine

Event card



Play **Vaccine** on top of a *Pathogen Species card*.

Discard the *Species card* beneath **Vaccine**.

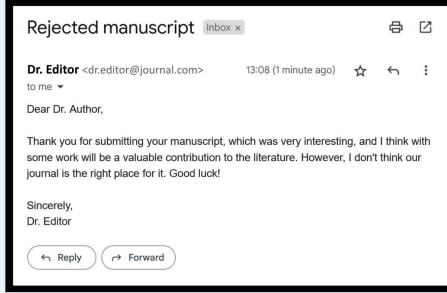
A new vaccine has led to a decline in cases. Further research on this species may no longer be necessary, although work towards equitable solutions across countries remains crucial.



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Rejected manuscript

Event card



Play **Rejected manuscript** beneath a *Species card*.

The *Species card* on top of **Rejected manuscript** does not give any points at the end of the game. *Sequencing generation* and *special points* still apply.

The journal has determined that your manuscript is not yet suitable for publication.



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International conference

Event card



Play **International conference** on a *Species card* and then discard it.

Move a *Species card* to any compatible position.

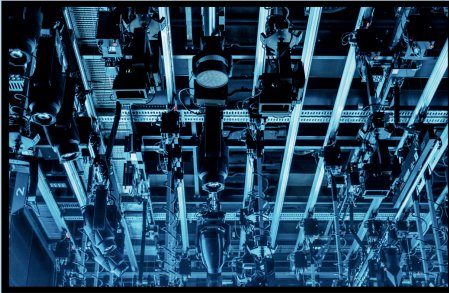
You have been invited to an international conference with all expenses fully covered; feast on the free food and drinks. Maybe you can also attend a seminar if you have spare time.



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Technological advancement

Event card



Place **Technological advancement** on the table until it is discarded.

Progress to the next sequencing generation.

Ride the wave of innovation for a leap into a brighter tomorrow. This is not just a card; it's a ticket to the future. Embrace the unknown, as right now, more than luck – you need an edge.



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Publication

Event card



Play **Publication** beneath a *Species card*. Double the points given at the end of the game by the *Species card* on top of **Publication**.

Because of the scientific significance of this species, you submitted a paper to a high impact journal, and they accepted it! However, not without ten revisions and fourteen corrections.



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Fundings

Event card



You may only play **Fundings** if you have at least 5 *Species cards* facing you. Discard an *Event card* in game.

Don't know how to solve a problem? Money can often pave the way to solutions. However, no one will part with their money unless you prove your value. So, keep striving!



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Research

Event card



Play **Research** beneath a *Species card*. The *Species card* on top of **Research** can now jump. If the *Species card* is moved, **Research** moves with it.

Recent studies suggest that this species shares a common ancestor with humans from 10 million years ago. Evolution works in weird ways... Meanwhile, we must investigate more about it!



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Nobel prize

Event card



Play **Nobel prize** after a player has played an *Event card*.

Discard the previously played *Event card* without carrying out its effect.

As a Nobel Prize winner, you'll find that people follow you unconditionally. If you express disagreement, they'll likely do the same! Just remember to maintain your distinguished shine.



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Financial cut

Event card



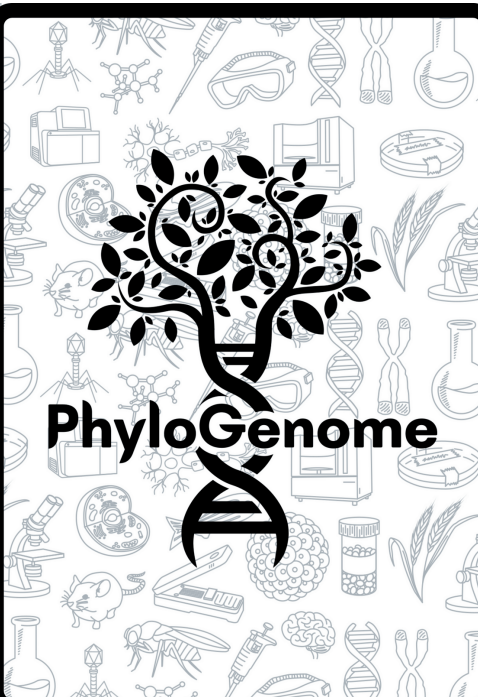
Play **Financial cut** beneath a *Species card*.

New *Species cards* cannot be played adjacent to the *Species card* on top of **Financial cut**.

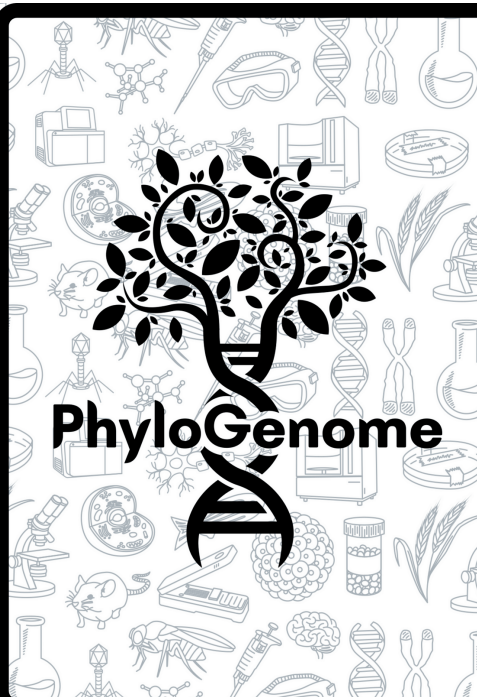
A groundbreaking discovery has recently captured the scientific community's focus. All ongoing research on this species is postponed.



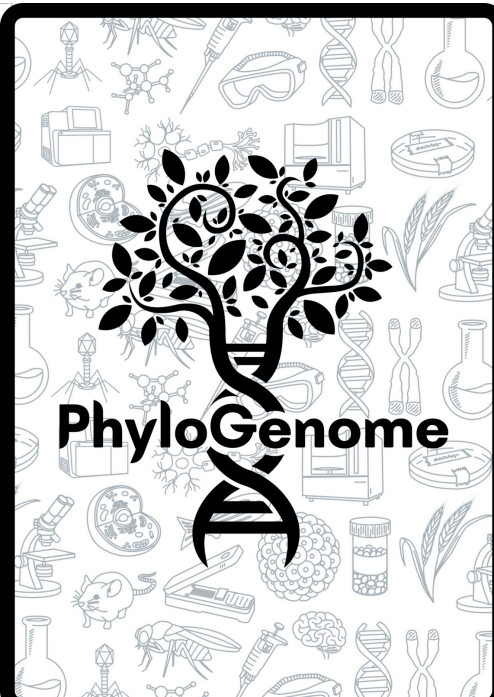
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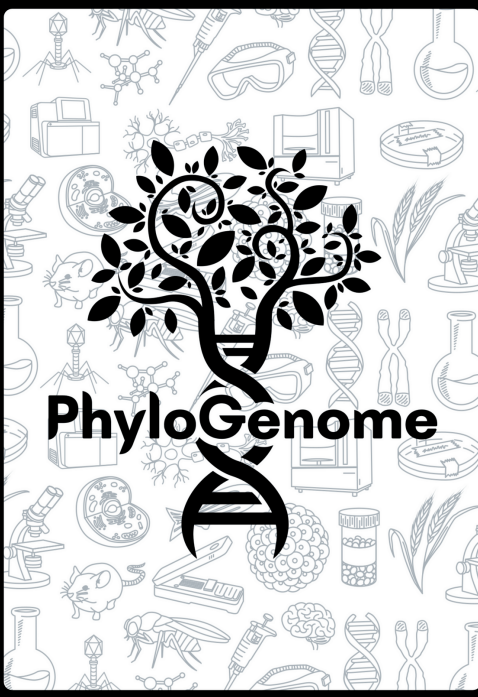
PhyloGenome



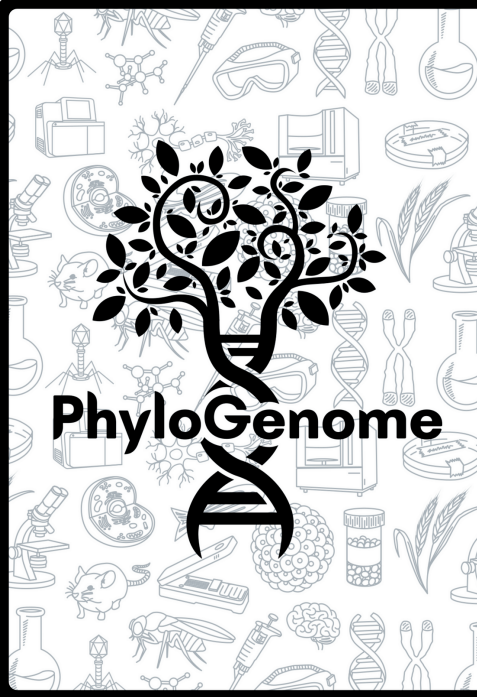
PhyloGenome



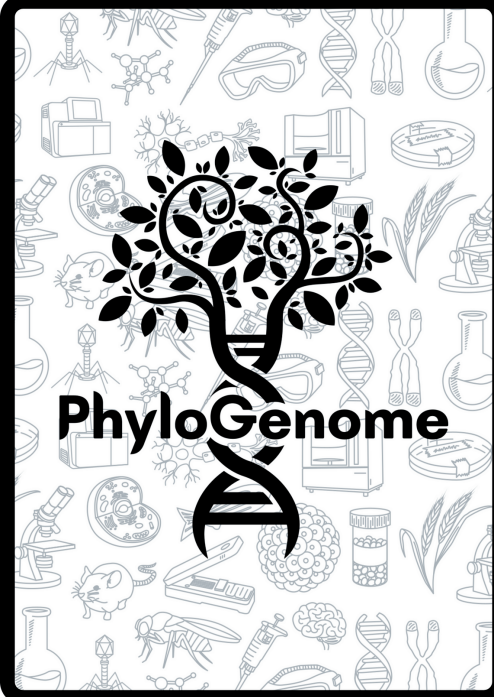
PhyloGenome



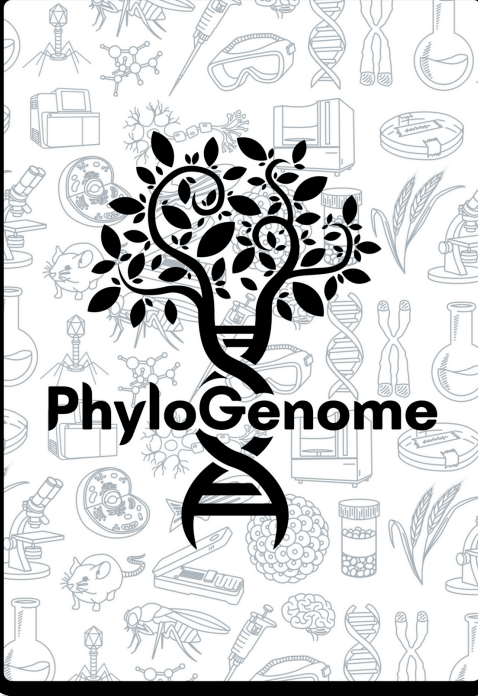
PhyloGenome



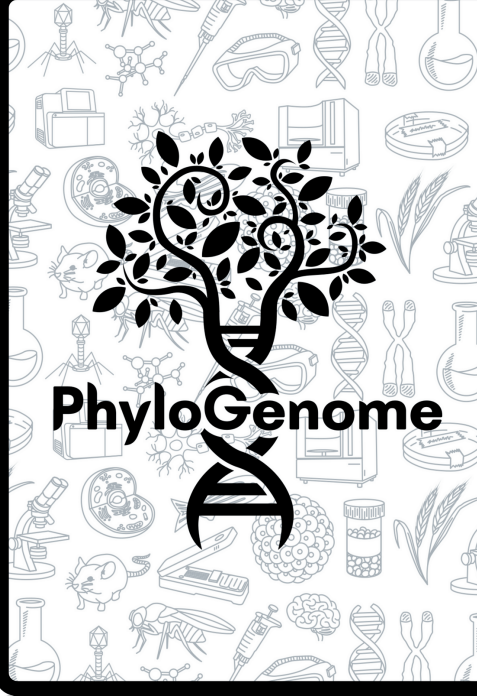
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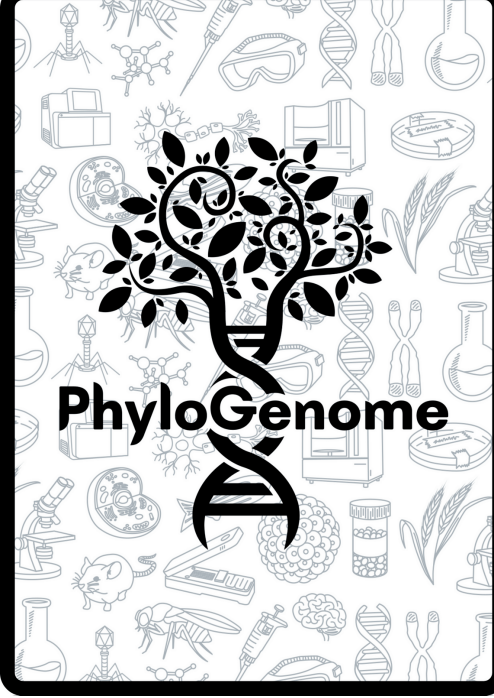
PhyloGenome



PhyloGenome



PhyloGenome



PhyloGenome

Cheetah
Acinonyx jubatus

7 1



2
POINTS



The cheetah has a move of 1.

First publication date: Dec 10, 2015

Genome size: 2,400 Mb

Coding genes: 19,999

Unique chromosomes: 19

Metazoa, Chordata, Mammalia



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Autònoma
de Barcelona

Facultat de
Biotecnologia

Thale cress
Arabidopsis thaliana

6 1



5
POINTS



The thale cress has a jump of 2.

First publication date: Dec 14, 2000

Genome size: 119 Mb

Coding genes: 27,562

Unique chromosomes: 5

Viridiplantae, Streptophyta, Magnoliopsida



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Autònoma
de Barcelona

Facultat de
Biotecnologia

Roundworm
Caenorhabditis elegans

6 1



4
POINTS



The roundworm has a jump of 2.

First publication date: Dec 11, 1998

Genome size: 100 Mb

Coding genes: 19,984

Unique chromosomes: 6

Metazoa, Nematoda, Chromadorea



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de Barcelona

Facultat de
Biotecnologia

Mallard
Anas platyrhynchos

7 2



5
POINTS



The mallard has a move of 2.

First publication date: Jun 9, 2013

Genome size: 1,200 Mb

Coding genes: 16,836

Unique chromosomes: 33

Metazoa, Chordata, Aves



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Autònoma
de Barcelona

Facultat de
Biotecnologia

Cattle
Bos taurus

7 1



2
POINTS



The cattle has a move of 1.

First publication date: Apr 24, 2009

Genome size: 2,800 Mb

Coding genes: 21,667

Unique chromosomes: 31

Metazoa, Chordata, Mammalia



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Autònoma
de Barcelona

Facultat de
Biotecnologia

Dog
Canis lupus familiaris

7 1



5
POINTS



The dog has a move of 2.

First publication date: Dec 8, 2005

Genome size: 2,500 Mb

Coding genes: 21,175

Unique chromosomes: 39

Metazoa, Chordata, Mammalia



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Pineapple
Ananas comosus

6 3



5
POINTS



The pineapple has a move of 2.

First publication date: Nov 2, 2015

Genome size: 382 Mb

Coding genes: 22,251

Unique chromosomes: 25

Viridiplantae, Streptophyta, Magnoliopsida



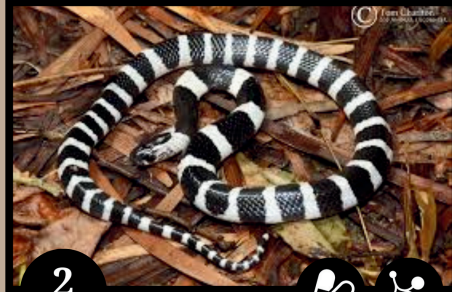
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Many-banded krait
Bungarus multicinctus

7 3



2
POINTS



The many-banded krait has a move of 1.

First publication date: Jul 12, 2022

Genome size: 1,600 Mb

Coding genes: 19,004

Unique chromosomes: 18

Metozoa, Chordata, Lepidosauria



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Candida
Candida albicans

5 1



2
POINTS



The candida has a jump of 1.

First publication date: May 3, 2004

Genome size: 14 Mb

Coding genes: 6,030

Unique chromosomes: 8

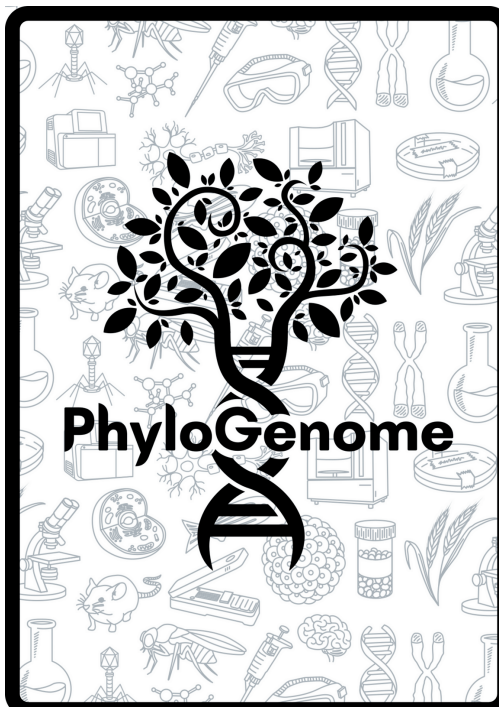
Fungi, Ascomycota, Saccharomycetes



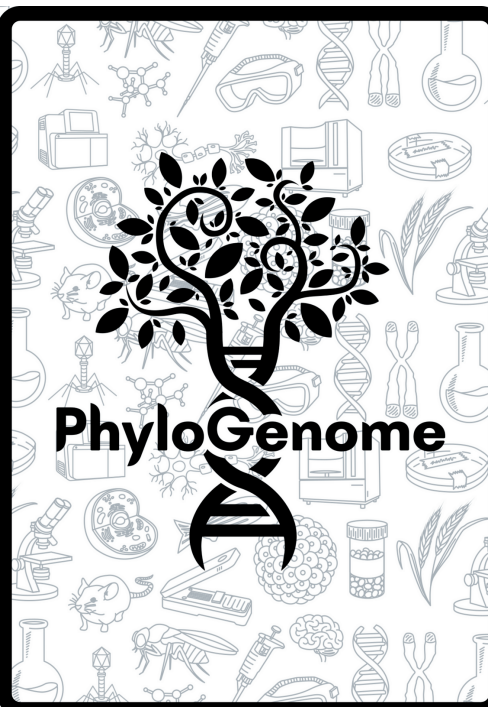
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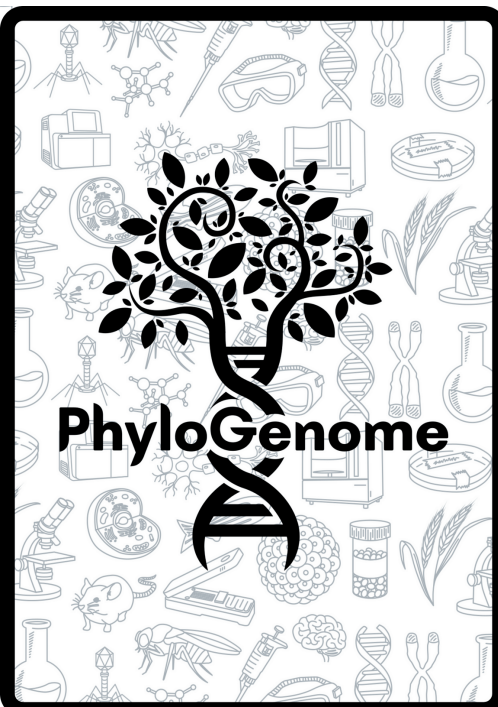
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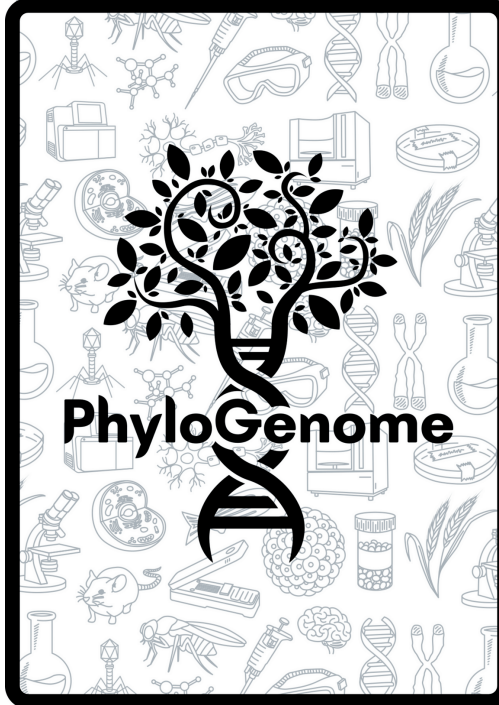
PhyloGenome



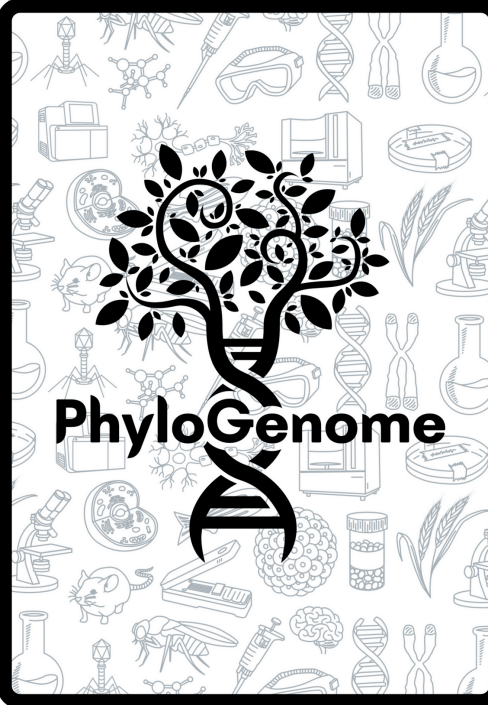
PhyloGenome



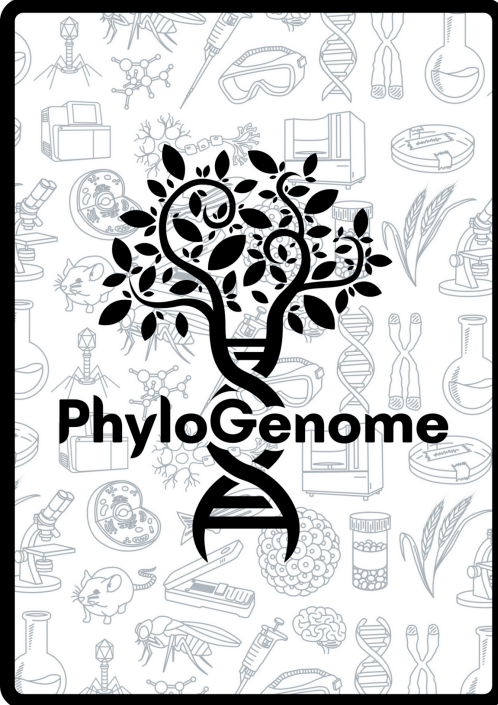
PhyloGenome



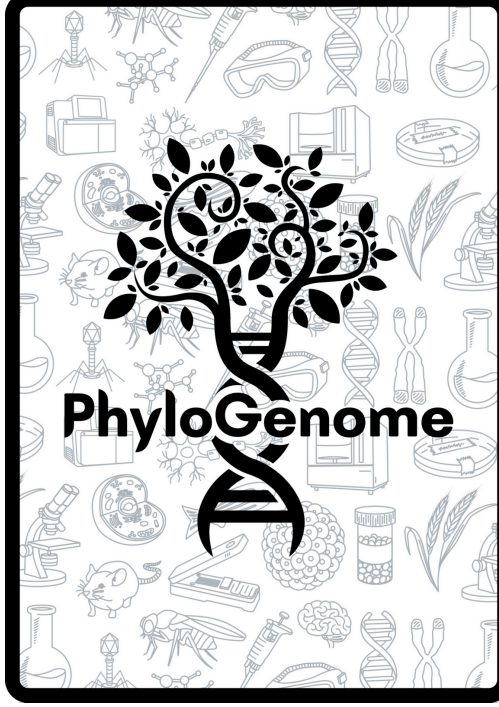
PhyloGenome



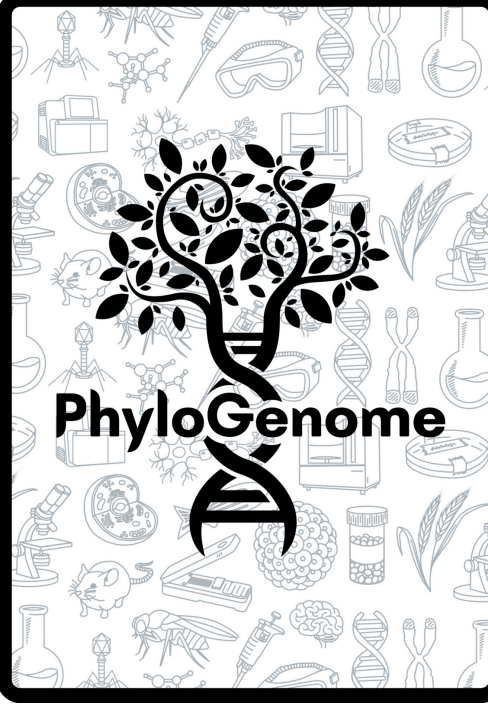
PhyloGenome



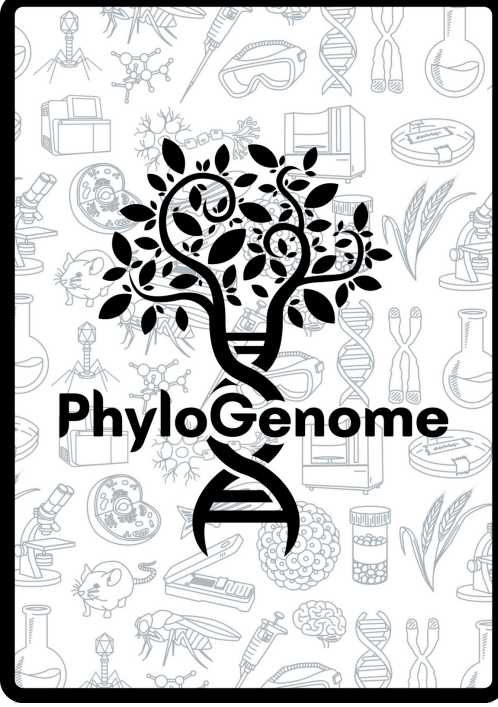
PhyloGenome



PhyloGenome



PhyloGenome



PhyloGenome

Green sea turtle
Chelonia mydas

7 3



5
POINTS



The green sea turtle has a move of 2.

First publication date: Jul 15, 2021

Genome size: 2,100 Mb

Coding genes: 19,752

Unique chromosomes: 28

Metazoa, Chordata, Testudines



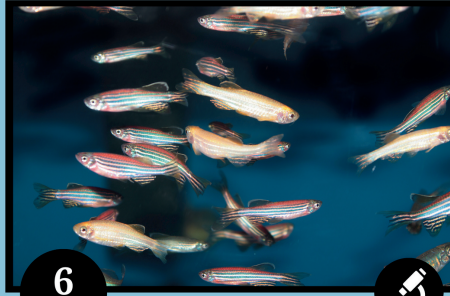
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Zebrafish
Danio rerio

7 2



6
POINTS



The zebrafish has a jump of 2.

First publication date: Apr 17, 2013

Genome size: 1,400 Mb

Coding genes: 26,448

Unique chromosomes: 25

Metazoa, Chordata, Actinopteri



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Chicken
Gallus gallus

7 1



5
POINTS



The chicken has a jump of 2.

First publication date: Dec 9, 2004

Genome size: 1,100 Mb

Coding genes: 18,023

Unique chromosomes: 41

Metazoa, Chordata, Aves



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Jap. grenadier anchovy
Coilia nasus

6 3



2
POINTS



The j. g. anchovy has a move of 1.

First publication date: Jan 2, 2020

Genome size: 852 Mb

Coding genes: 20,837

Unique chromosomes: 24

Metazoa, Chordata, Actinopteri



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E. coli
Escherichia coli

4 1



4
POINTS



The E. coli has a jump of 2.

First publication date: Sep 5, 1997

Genome size: 5 Mb

Coding genes: 4,288

Unique chromosomes: 1

Pseudomonadota, Gammaproteobacteria, Enterobacterales



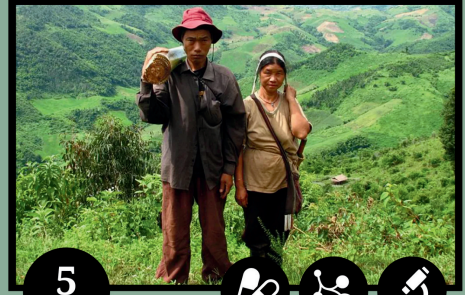
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Human
Homo sapiens

7 1



5
POINTS



The human has a jump of 2.

First publication date: Feb 15, 2001

Genome size: 3,100 Mb

Coding genes: 20,080

Unique chromosomes: 24

Metazoa, Chordata, Mammalia



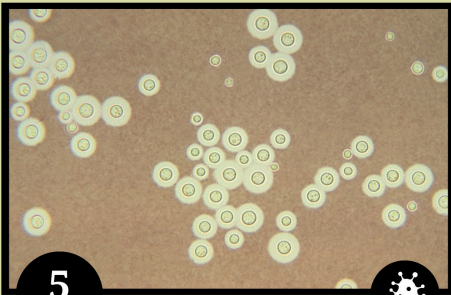
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Cryptococcus
Cryptococcus neoformans

5 1



5
POINTS



The cryptococcus has a move of 2.

First publication date: Feb 25, 2005

Genome size: 19 Mb

Coding genes: 6,632

Unique chromosomes: 14

Fungi, Basidiomycota, Tremellomycetes



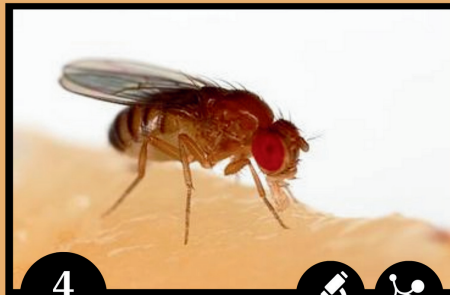
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Fruit fly
Drosophila melanogaster

6 1



4
POINTS



The fruit fly has a jump of 2.

First publication date: Mar 24, 2000

Genome size: 144 Mb

Coding genes: 13,962

Unique chromosomes: 7

Metazoa, Arthropoda, Insecta



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Swiftwater hydra
Hydra vulgaris

6 1



6
POINTS



The swiftwater hydra has a jump of 2.

First publication date: Mar 14, 2010

Genome size: 819 Mb

Coding genes: 21,385

Unique chromosomes: 15

Metazoa, Cnidaria, Hydrozoa



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G. short-tailed opossum 7 1
Monodelphis domestica



5
POINTS



The short-tailed opossum has a jump of 2.
First publication date: May 10, 2007
Genome size: 3,600 Mb
Coding genes: 21,694
Unique chromosomes: 10

Metazoa, Chordata, Mammalia

Sheep 7 2
Ovis aries



5
POINTS



The sheep has a move of 2.
First publication date: Jun 6, 2014
Genome size: 2,700 Mb
Coding genes: 21,300
Unique chromosomes: 28

Metazoa, Chordata, Mammalia

Vaquita 7 3
Phocoena sinus



2
POINTS



The vaquita has a move of 1.
First publication date: Oct 22, 2020
Genome size: 2,400 Mb
Coding genes: 19,069
Unique chromosomes: 22

Metazoa, Chordata, Mammalia

House mouse 7 1
Mus musculus



5
POINTS



The house mouse has a jump of 2.
First publication date: Dec 5, 2002
Genome size: 2,700 Mb
Coding genes: 22,198
Unique chromosomes: 21

Metazoa, Chordata, Mammalia

Lion 7 2
Panthera leo



2
POINTS



The lion has a move of 1.
First publication date: Sep 17, 2013
Genome size: 2,300 Mb
Coding genes: 19,491
Unique chromosomes: 19

Metazoa, Chordata, Mammalia

Garden pea 7 3
Pisum sativum



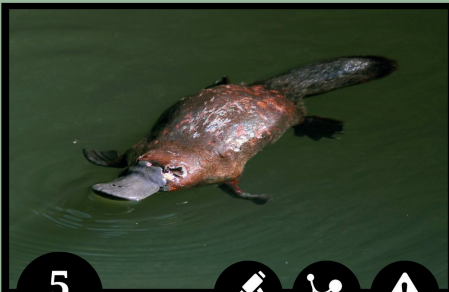
5
POINTS



The garden pea has a jump of 2.
First publication date: Sep 2, 2019
Genome size: 3,800 Mb
Coding genes: 40,025
Unique chromosomes: 7

Viridiplantae, Streptophyta, Magnoliopsida

Platypus 7 1
Ornithorhynchus anatinus



5
POINTS



The platypus has a jump of 2.
First publication date: May 8, 2008
Genome size: 1,900 Mb
Coding genes: 18,152
Unique chromosomes: 31

Metazoa, Chordata, Mammalia

Amur tiger 7 2
Panthera tigris altaica



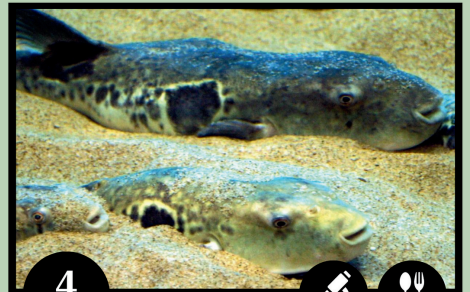
2
POINTS



The amur tiger has a move of 1.
First publication date: Sep 17, 2013
Genome size: 2,400 Mb
Coding genes: 18,509
Unique chromosomes: 19

Metazoa, Chordata, Mammalia

Torafugu 6 1
Takifugu rubripes

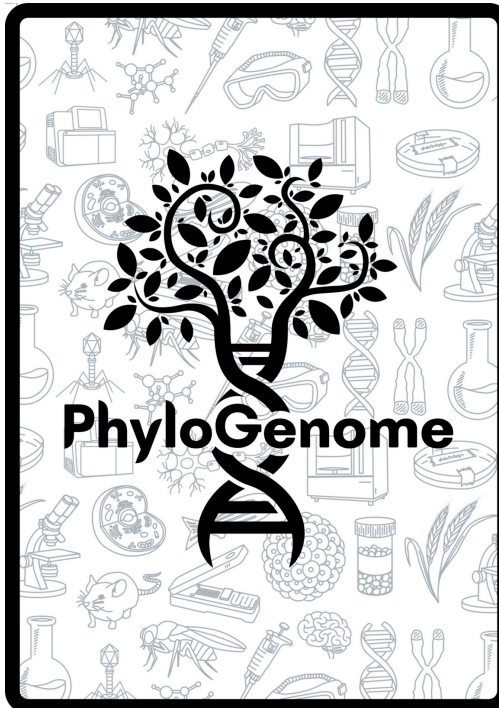


4
POINTS

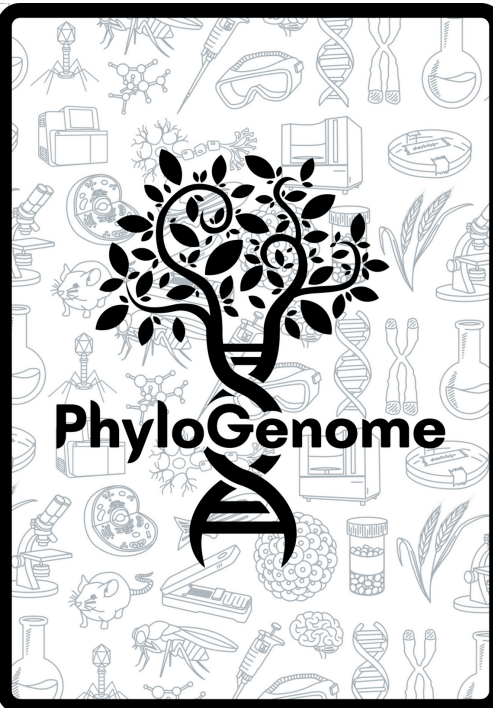


The torafugu has a jump of 2.
First publication date: Aug 23, 2002
Genome size: 384 Mb
Coding genes: 21,411
Unique chromosomes: 22

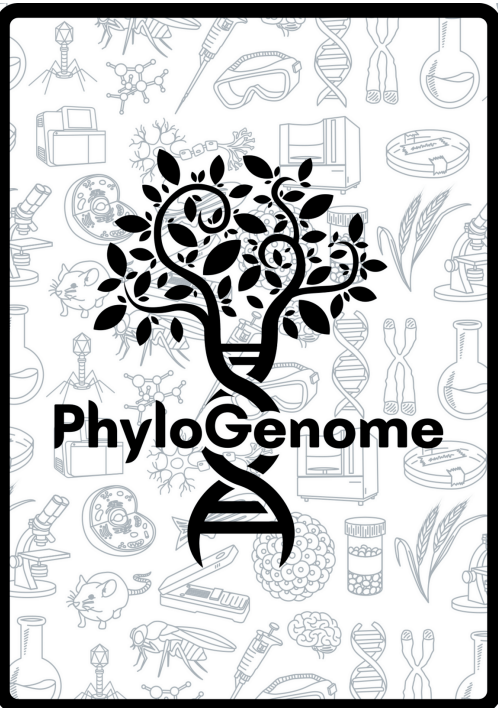
Metazoa, Chordata, Actinopteri



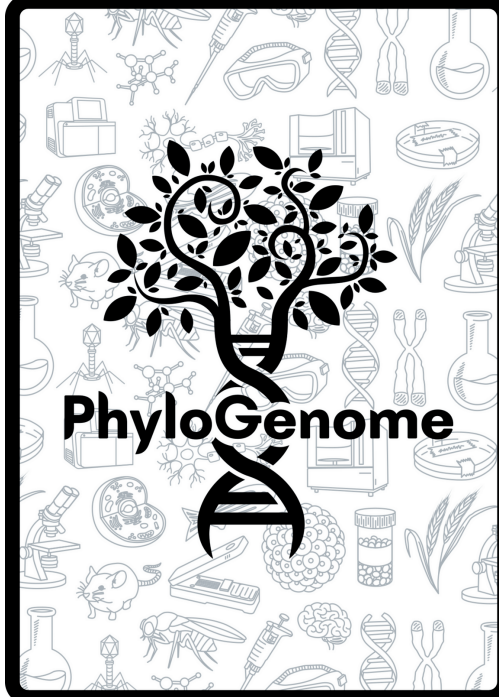
PhyloGenome



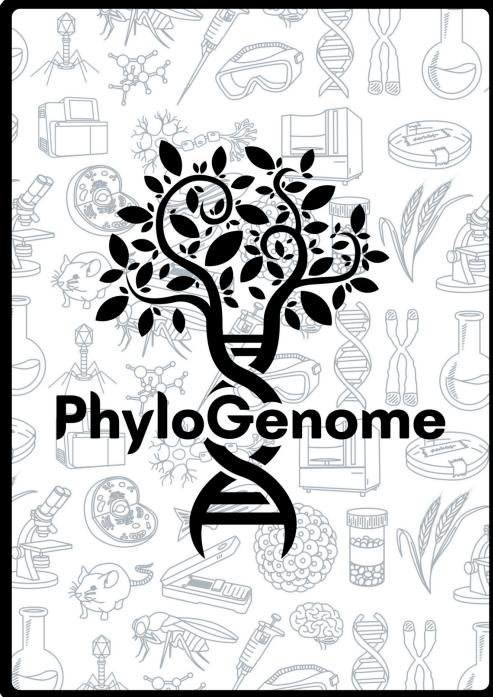
PhyloGenome



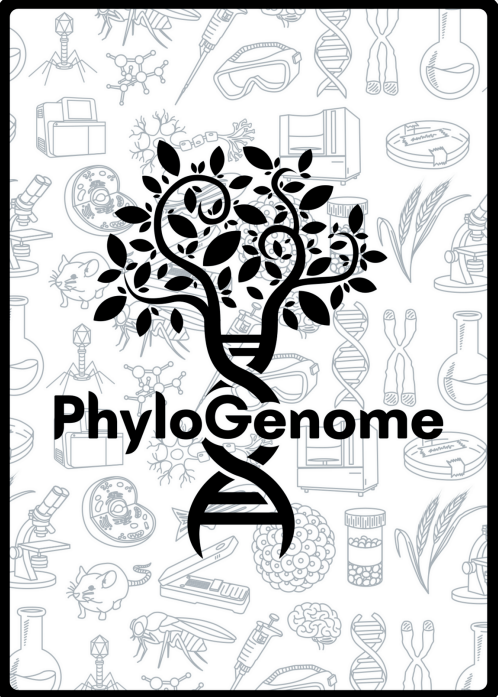
PhyloGenome



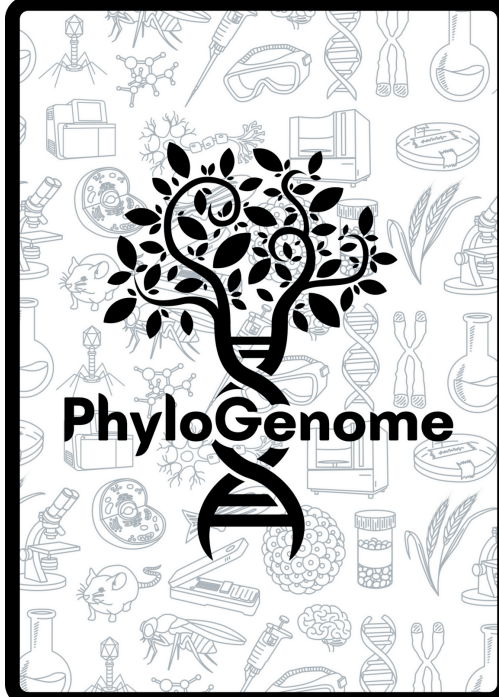
PhyloGenome



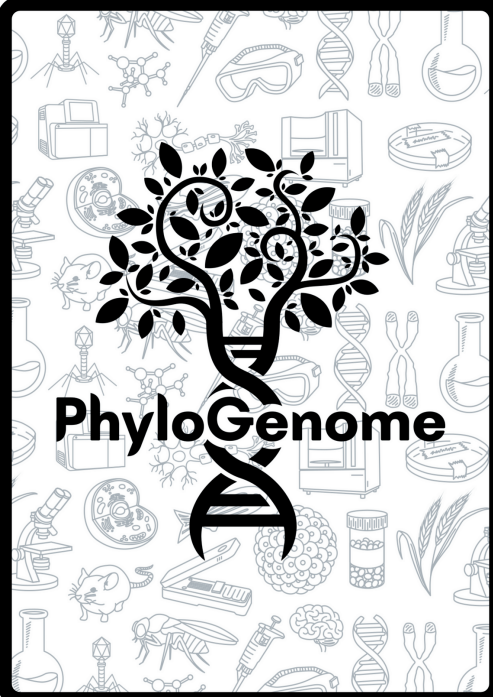
PhyloGenome



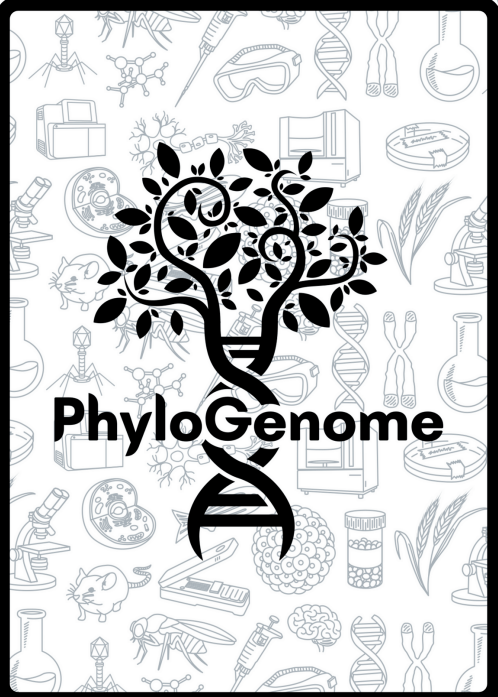
PhyloGenome



PhyloGenome



PhyloGenome



PhyloGenome

Horse
Equus caballus

7 1



5
POINTS



The horse has a move of 2.

First publication date: Nov 6, 2009

Genome size: 2,500 Mb

Coding genes: 21,129

Unique chromosomes: 32

Metazoa, Chordata, Mammalia



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Budgerigar
Melopsittacus undulatus

7 3



2
POINTS



The budgerigar has a move of 1.

First publication date: Jul 8, 2014

Genome size: 1,200 Mb

Coding genes: 16,458

Unique chromosomes: 32

Metazoa, Chordata, Aves



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Afr. savanna elephant
Loxodonta africana

7 3



2
POINTS



The savanna elephant has a move of 1.

First publication date: Jan 11, 2024

Genome size: 3,500 Mb

Coding genes: 22,303

Unique chromosomes: 29

Metazoa, Chordata, Mammalia



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African clawed frog
Xenopus laevis

7 2



6
POINTS



The african clawed frog has a jump of 2.

First publication date: Oct 20, 2016

Genome size: 2,700 Mb

Coding genes: 34,476

Unique chromosomes: 18

Metazoa, Chordata, Amphibia



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Tasmanian devil
Sarcophilus harrisi

7 2



5
POINTS



The tasmanian devil has a move of 2.

First publication date: Feb 17, 2012

Genome size: 3,100 Mb

Coding genes: 19,966

Unique chromosomes: 8

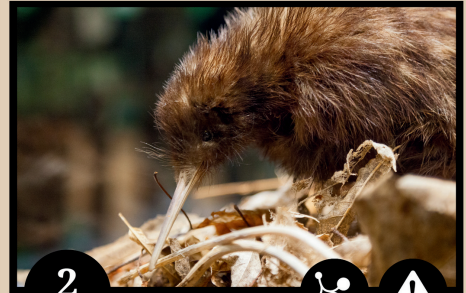
Metazoa, Chordata, Mammalia



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North Island brown kiwi
Apteryx mantelli

7 2



2
POINTS



The N. Island brown kiwi has a move of 1.

First publication date: Jul 23, 2015

Genome size: 1,500 Mb

Coding genes: 16,251

Unique chromosomes: 40

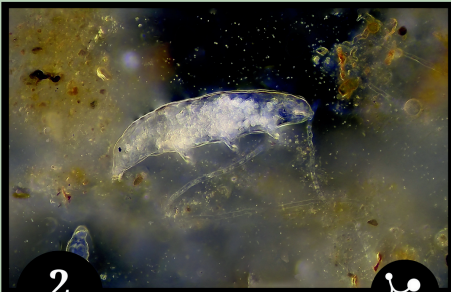
Metazoa, Chordata, Aves



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Water bear
Hypsibius dujardini

6 3



2
POINTS



The water bear has a move of 1.

First publication date: Nov 23, 2015

Genome size: 182 Mb

Coding genes: 23,021

Unique chromosomes: 5

Metazoa, Tardigrada, Eutardigrada



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Tammar wallaby
Notamacropus eugenii

7 2



2
POINTS



The tammar wallaby has a move of 1.

First publication date: Aug 19, 2011

Genome size: 3,400 Mb

Coding genes: 15,290

Unique chromosomes: 9

Metazoa, Chordata, Mammalia



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Emu
Dromaius novaehollandiae

7 3



2
POINTS



The emu has a move of 1.

First publication date: Mar 1, 2021

Genome size: 1,500 Mb

Coding genes: 17,857

Unique chromosomes: 41

Metazoa, Chordata, Aves



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Honey bee

Apis mellifera

6 1



4
POINTS



The honey bee has a jump of 2.

First publication date: Oct 26, 2006

Genome size: 225 Mb

Coding genes: 9,935

Unique chromosomes: 16

Metazoa, Arthropoda, Insecta



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Iberian lynx

Lynx pardinus

7 2



2
POINTS



The Iberian lynx has a move of 1.

First publication date: Dec 14, 2016

Genome size: 2,400 Mb

Coding genes: 21,160

Unique chromosomes: 20

Metazoa, Chordata, Mammalia



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Rhesus monkey

Macaca mulatta

7 1



4
POINTS



The rhesus monkey has a jump of 2.

First publication date: Apr 13, 2007

Genome size: 3,000 Mb

Coding genes: 21,121

Unique chromosomes: 22

Metazoa, Chordata, Mammalia



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Domestic silkworm

Bombyx mori

6 1



1
POINT



The domestic silkworm has a jump of 1.

First publication date: Feb 1, 2004

Genome size: 462 Mb

Coding genes: 13,459

Unique chromosomes: 29

Metazoa, Arthropoda, Insecta



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Wild strawberry

Fragaria vesca

6 2



6
POINTS



The wild strawberry has a move of 2.

First publication date: Dec 26, 2010

Genome size: 214 Mb

Coding genes: 22,383

Unique chromosomes: 7

Viridiplantae, Streptophyta, Magnoliopsida



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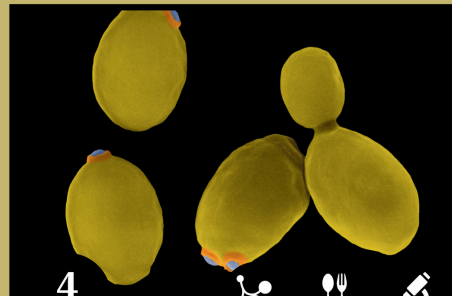
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Brewer's yeast

Saccharomyces cerevisiae

5 1



4
POINTS



The brewer's yeast has a jump of 2.

First publication date: Oct 25, 1996

Genome size: 12 Mb

Coding genes: 6,014

Unique chromosomes: 16

Fungi, Ascomycota, Saccharomycetes



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Coffee

Coffea arabica

7 2



1
POINT



The coffee has a move of 1.

First publication date: Mar 13, 2020

Genome size: 1,100 Mb

Coding genes: 44,759

Unique chromosomes: 22

Viridiplantae, Streptophyta, Magnoliopsida



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Bornean orangutan

Pongo pygmaeus

7 2



6
POINTS



The Bornean orangutan has a move of 2.

First publication date: Jan 26, 2011

Genome size: 3,200 Mb

Coding genes: 22,085

Unique chromosomes: 25

Metazoa, Chordata, Mammalia



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Atlantic salmon

Salmo salar

7 2



6
POINTS



The Atlantic salmon has a move of 2.

First publication date: Apr 18, 2016

Genome size: 2,800 Mb

Coding genes: 42,985

Unique chromosomes: 29

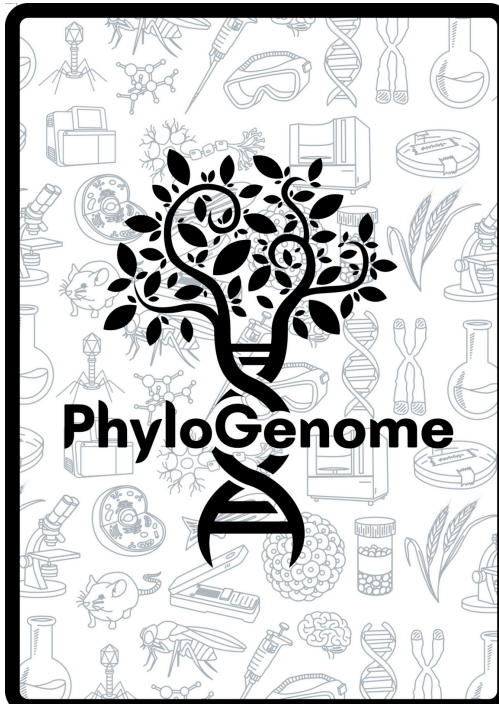
Metazoa, Chordata, Actinopteri



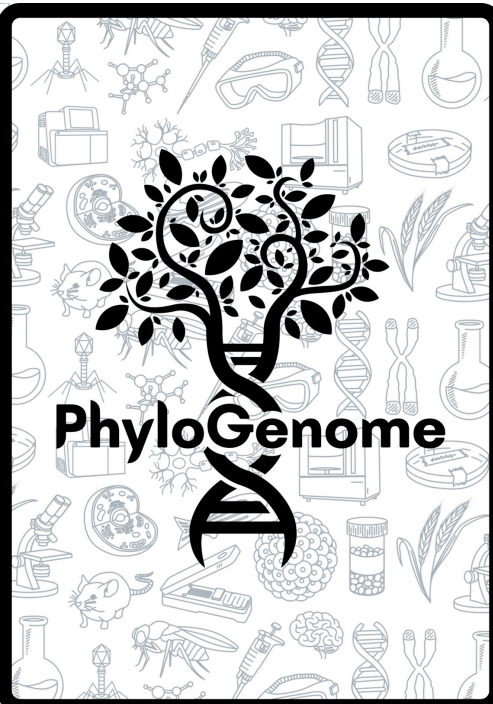
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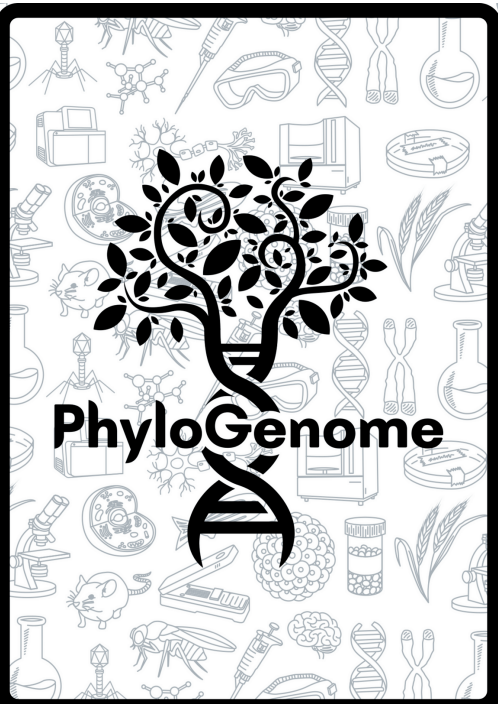
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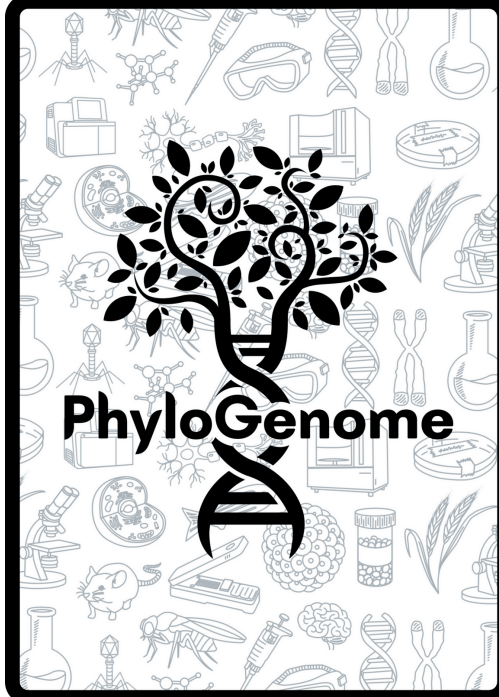
PhyloGenome



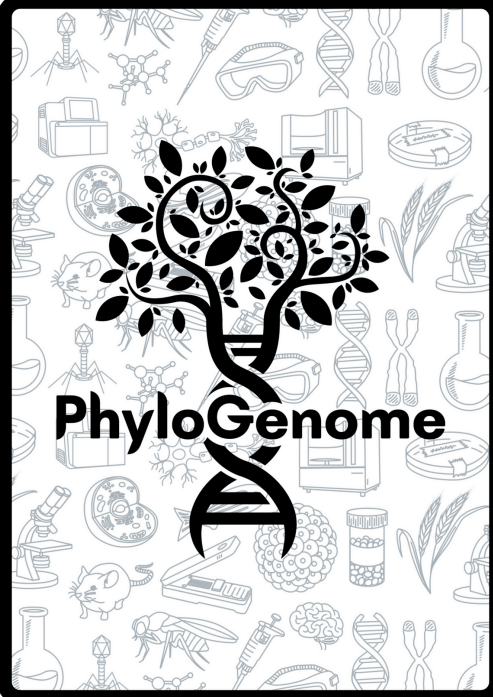
PhyloGenome



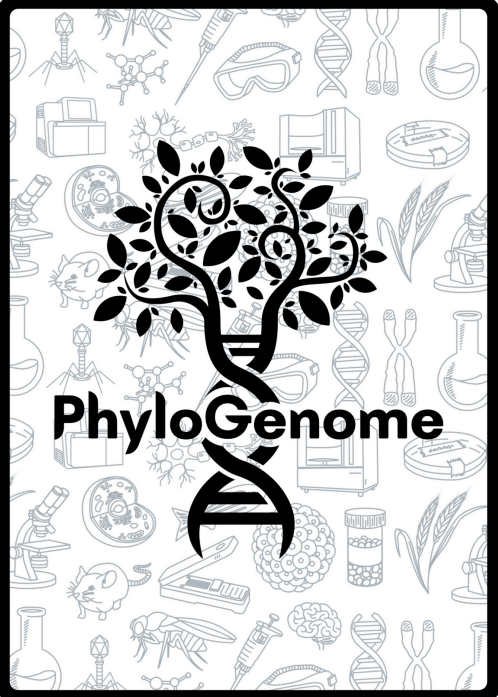
PhyloGenome



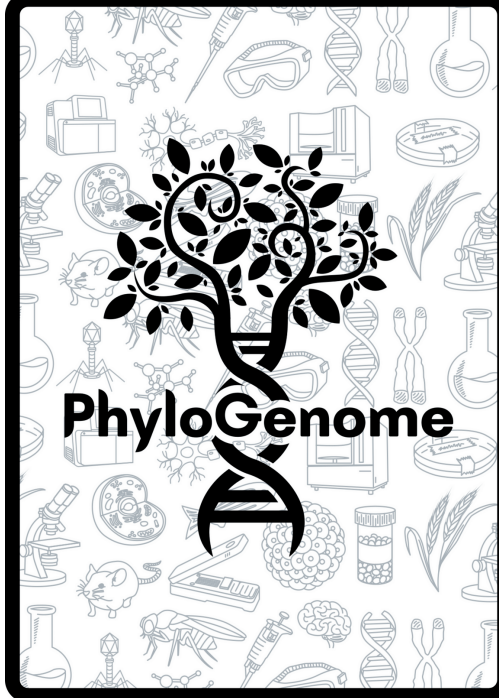
PhyloGenome



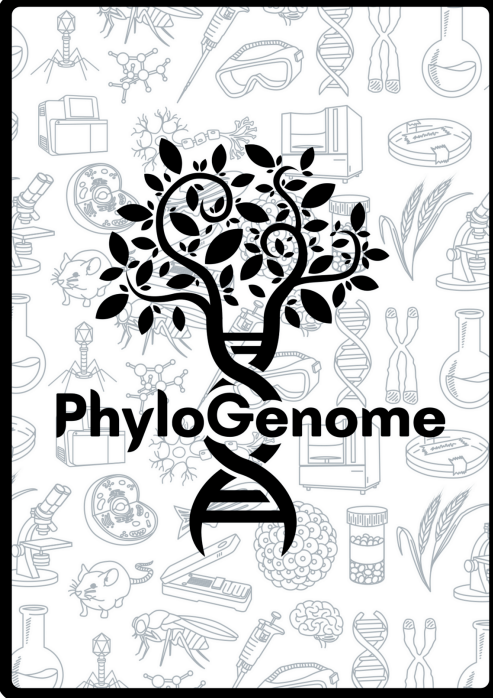
PhyloGenome



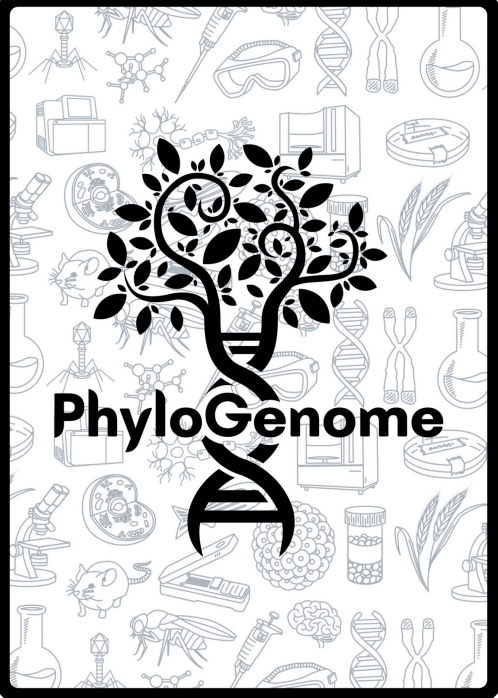
PhyloGenome



PhyloGenome



PhyloGenome



PhyloGenome

Axolotl

Ambystoma mexicanum

8 3



6
POINTS



The axolotl has a jump of 2.

First publication date: Jan 24, 2018

Genome size: 28,200 Mb

Coding genes: 23,251

Unique chromosomes: 28

Metazoa, Chordata, Amphibia



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A. fulgidus

Archaeoglobus fulgidus

4 1



5
POINTS



The A. fulgidus has a move of 2.

First publication date: Nov 27, 1997

Genome size: 2 Mb

Coding genes: 2,610

Unique chromosomes: 1

Euryarchaeota, Archaeoglobi, Archaeoglobales



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Red deer

Cervus elaphus

7 2



1
POINT



The red deer has a move of 1.

First publication date: Jan 2, 2018

Genome size: 2,900 Mb

Coding genes: 22,941

Unique chromosomes: 34

Metazoa, Chordata, Mammalia



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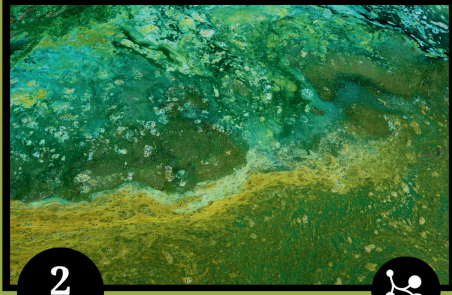
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A. marina

Acaryochloris marina

4 2



2
POINTS



The A. marina has a move of 1.

First publication date: Feb 12, 2008

Genome size: 8 Mb

Coding genes: 7,294

Unique chromosomes: 10

Cyanobacteriota, Cyanophyceae, Acaryochloridales



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Green anole

Anolis carolinensis

7 1



6
POINTS



The green anole has a move of 2.

First publication date: Aug 31, 2011

Genome size: 1,900 Mb

Coding genes: 20,447

Unique chromosomes: 8

Metazoa, Chordata, Lepidosauria



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B. anthracis

Bacillus anthracis

4 1



5
POINTS



The B. anthracis has a move of 2.

First publication date: May 1, 2003

Genome size: 6 Mb

Coding genes: 5,227

Unique chromosomes: 3

Bacillota, Bacilli, Bacillales



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Wine grape

Vitis vinifera

6 1



5
POINTS



The wine grape has a move of 2.

First publication date: Aug 26, 2007

Genome size: 495 Mb

Coding genes: 25,187

Unique chromosomes: 19

Viridiplantae, Streptophyta, Magnoliopsida



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Giant panda

Ailuropoda melanoleuca

7 2



6
POINTS



The giant panda has a move of 2.

First publication date: Dec 13, 2009

Genome size: 2,400 Mb

Coding genes: 20,837

Unique chromosomes: 21

Metazoa, Chordata, Mammalia



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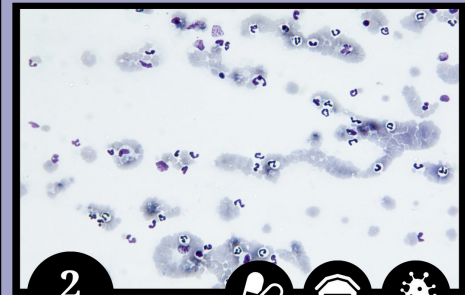
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B. bovis

Babesia bovis

4 1



2
POINTS



The B. bovis has a move of 1.

First publication date: Oct 19, 2007

Genome size: 8 Mb

Coding genes: 3,959

Unique chromosomes: 4

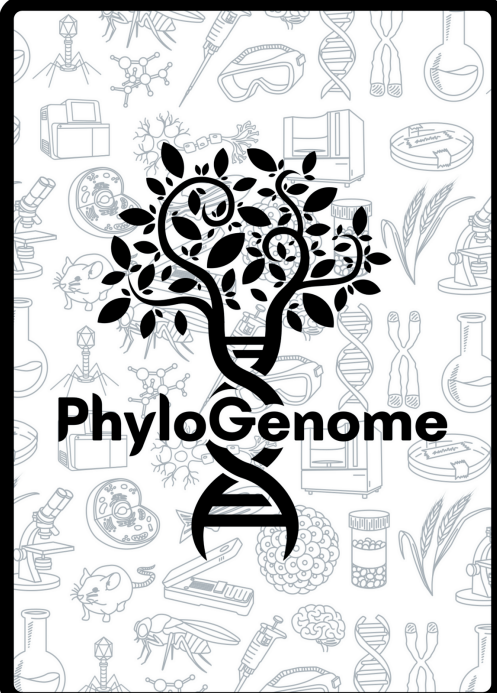
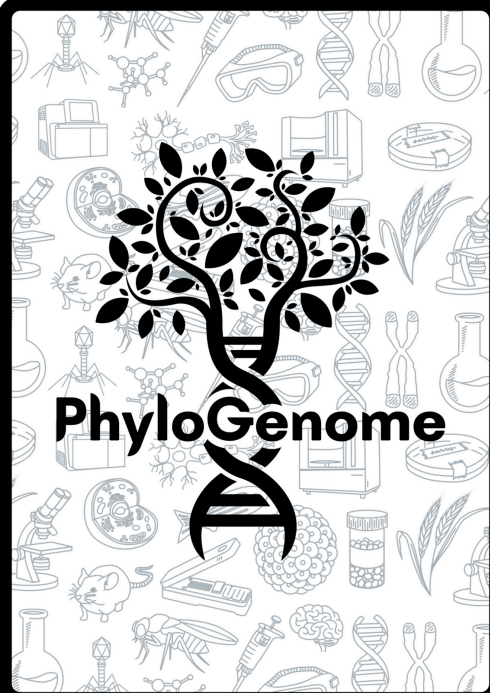
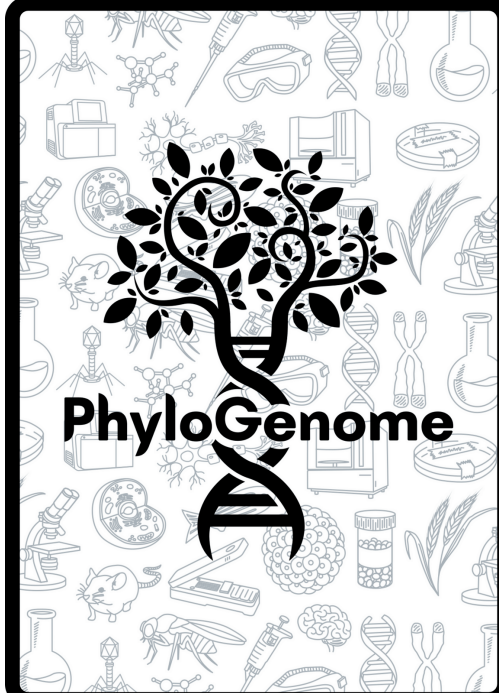
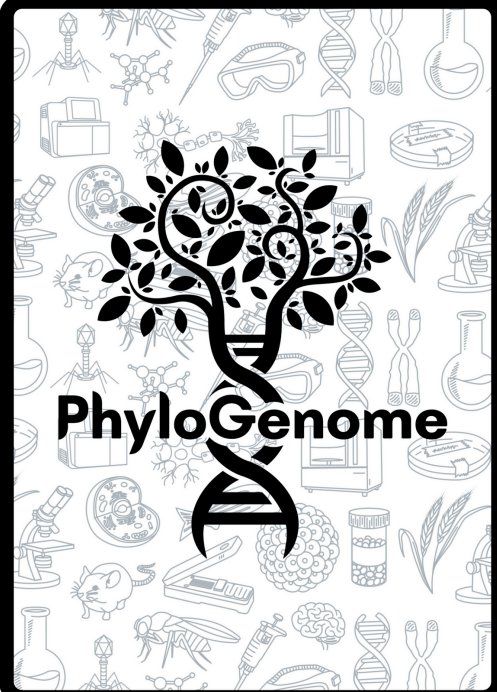
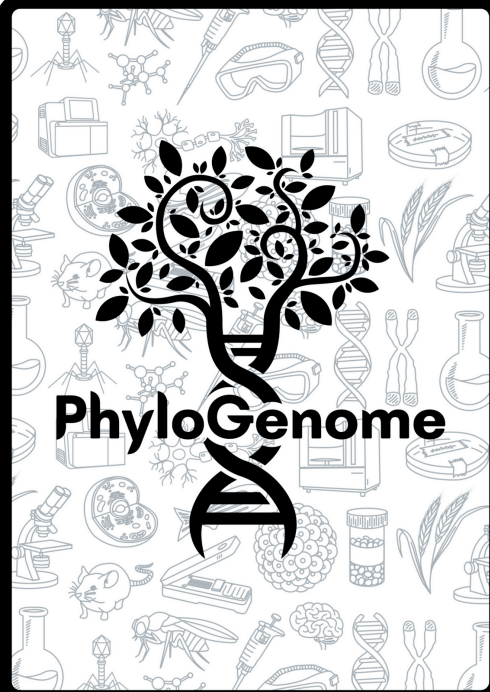
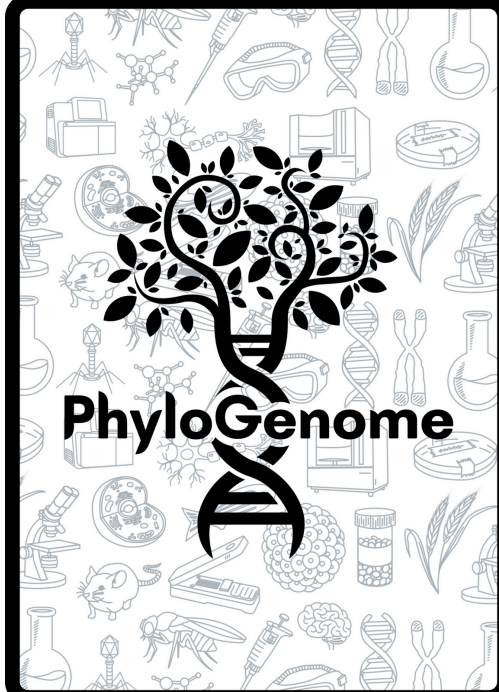
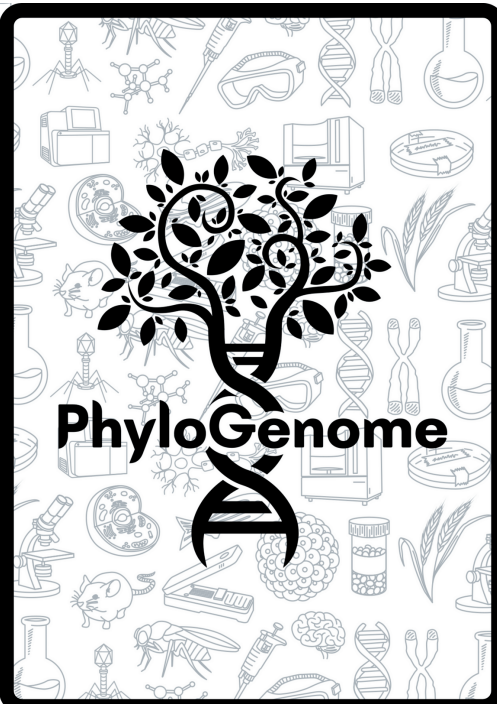
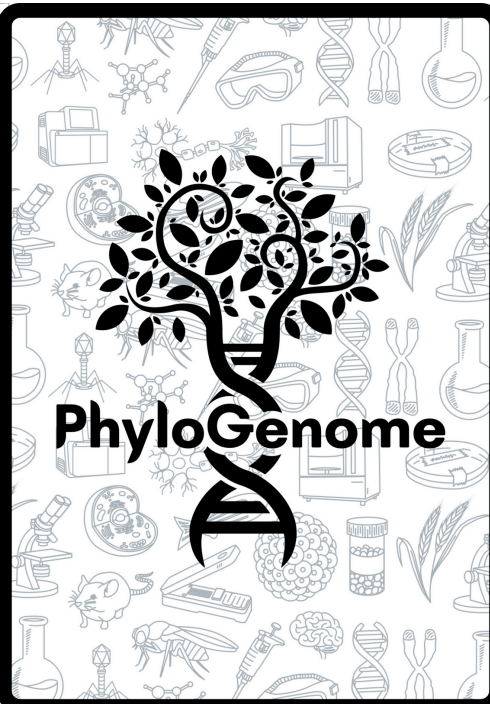
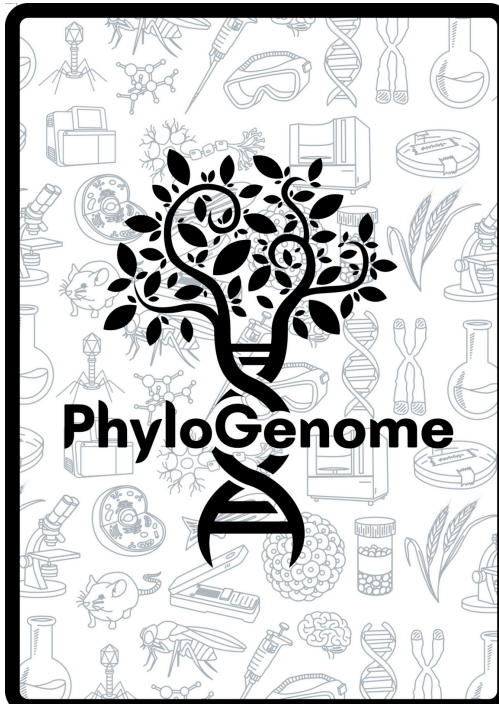
Apicomplexa, Aconoidasida, Piroplasmida



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Common sunflower
Helianthus annuus

7 3



6
POINTS



The common sunflower has a move of 2.

First publication date: May 22, 2017

Genome size: 3,000 Mb

Coding genes: 57,237

Unique chromosomes: 17

Viridiplantae, Streptophyta, Magnoliopsida



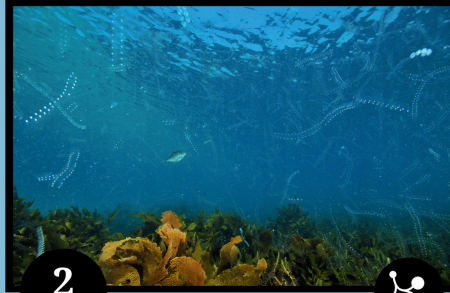
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O. lucimarinus
Ostreococcus lucimarinus

5 1



2
POINTS



The O. lucimarinus has a move of 1.

First publication date: May 1, 2007

Genome size: 13 Mb

Coding genes: 7,603

Unique chromosomes: 21

Viridiplantae, Chlorophyta, Mamiellophyceae



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Bottlenose dolphin
Tursiops truncatus

7 1



6
POINTS



The bottlenose dolphin has a move of 2.

First publication date: Oct 12, 2011

Genome size: 2,400 Mb

Coding genes: 19,240

Unique chromosomes: 23

Metazoa, Chordata, Mammalia



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American lobster
Homarus americanus

7 3



3
POINTS



The American lobster has a move of 1.

First publication date: Jun 23, 2021

Genome size: 2,300 Mb

Coding genes: 22,368

Unique chromosomes: ~136

Metazoa, Arthropoda, Malacostraca



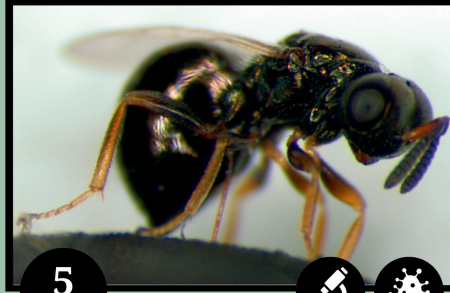
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Jewel wasp
Nasonia vitripennis

6 1



5
POINTS



The jewel wasp has a jump of 2.

First publication date: Jan 15, 2010

Genome size: 297 Mb

Coding genes: 13,602

Unique chromosomes: 6

Metazoa, Arthropoda, Insecta



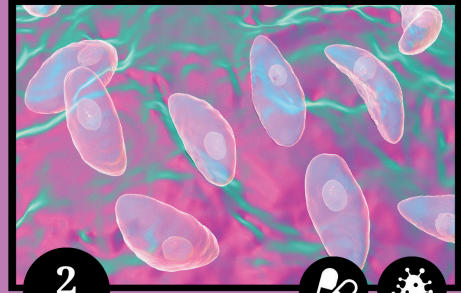
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T. gondii
Toxoplasma gondii

5 2



2
POINTS



The T. gondii has a move of 1.

First publication date: May 20, 2009

Genome size: 66 Mb

Coding genes: 8,318

Unique chromosomes: 14

Apicomplexa, Conoidasida, Eucoccidiorida



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Sweet orange
Citrus sinensis

6 2



5
POINTS



The sweet orange has a move of 2.

First publication date: Nov 25, 2012

Genome size: 299 Mb

Coding genes: 23,556

Unique chromosomes: 9

Viridiplantae, Streptophyta, Magnoliopsida



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Kinetoplastid parasite
Leishmania major

5 1



5
POINTS



The kinetoplastid parasite has a move of 2.

First publication date: Jul 15, 2005

Genome size: 33 Mb

Coding genes: 8,316

Unique chromosomes: 36

Euglenozoa, Kinetoplastea, Trypanosomatida



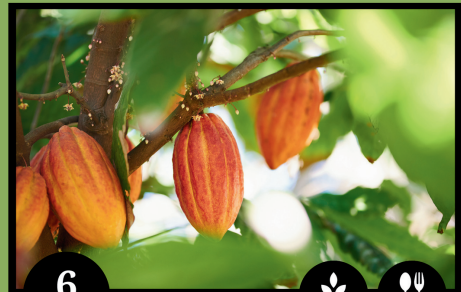
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Cacao
Theobroma cacao

6 2



6
POINTS



The cacao has a move of 2.

First publication date: Dec 26, 2010

Genome size: 325 Mb

Coding genes: 21,518

Unique chromosomes: 10

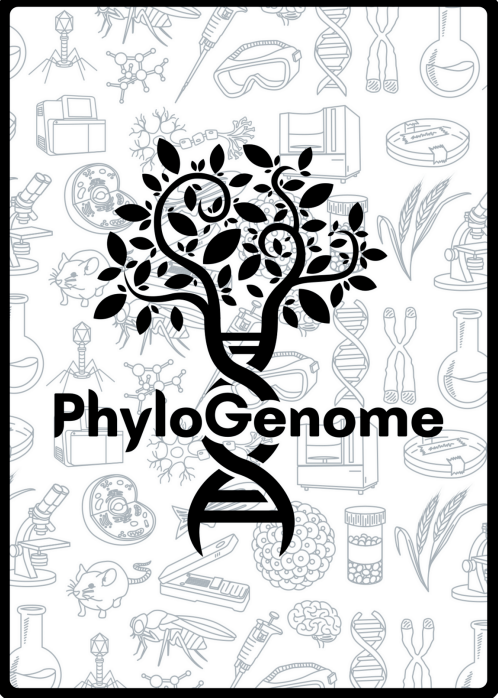
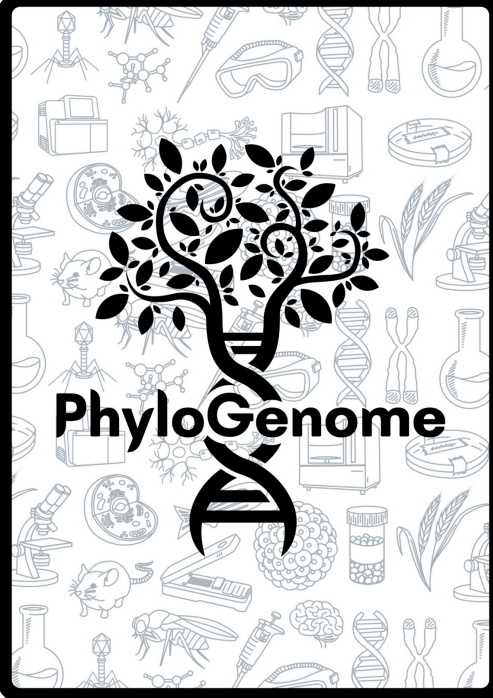
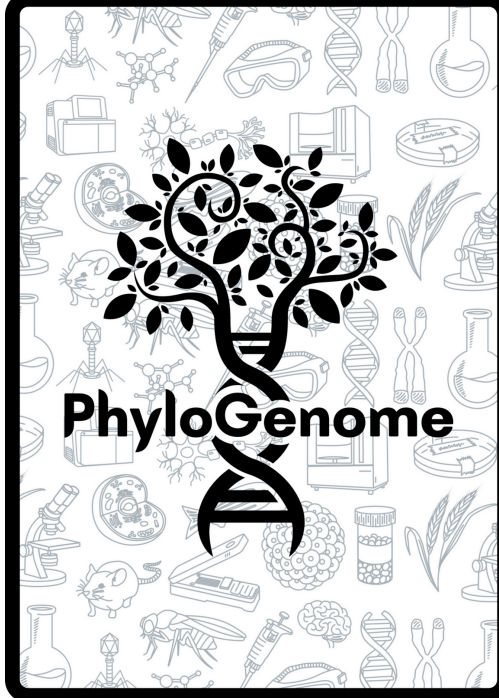
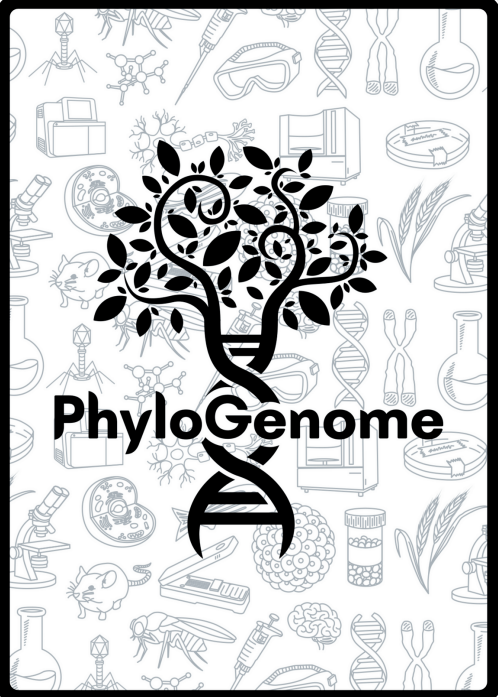
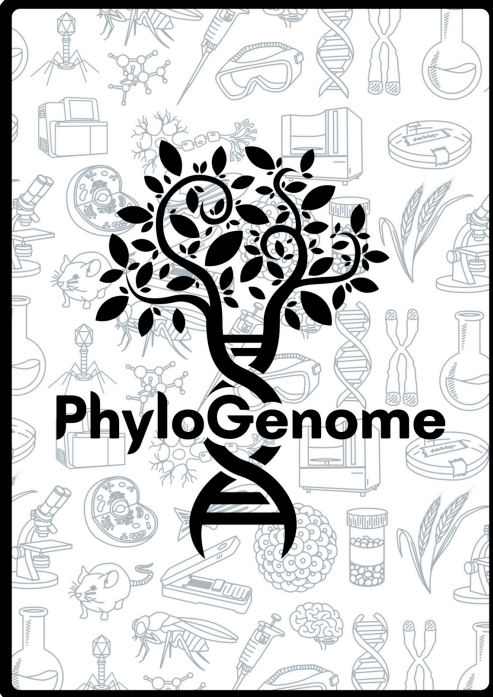
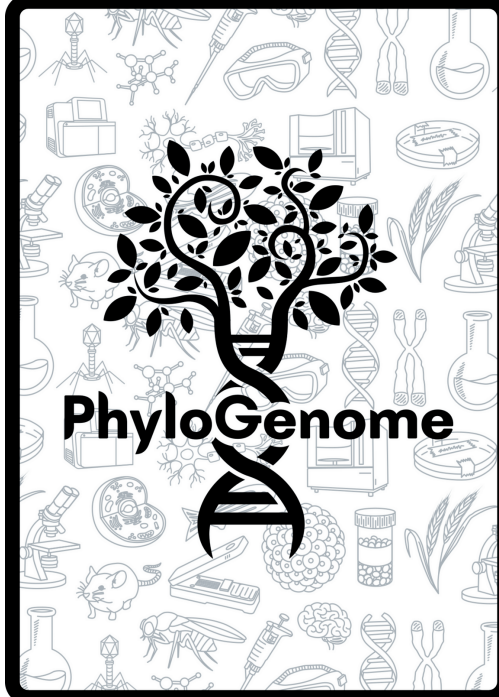
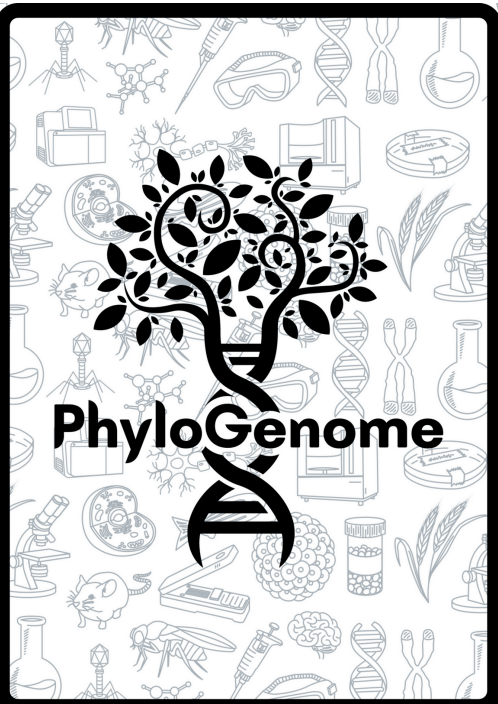
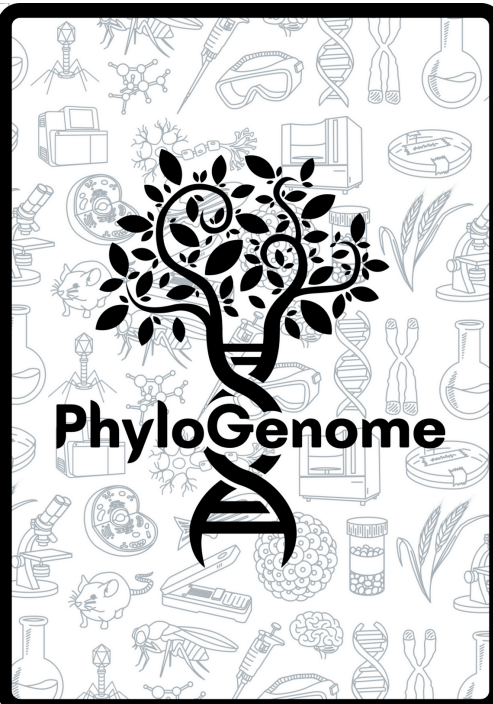
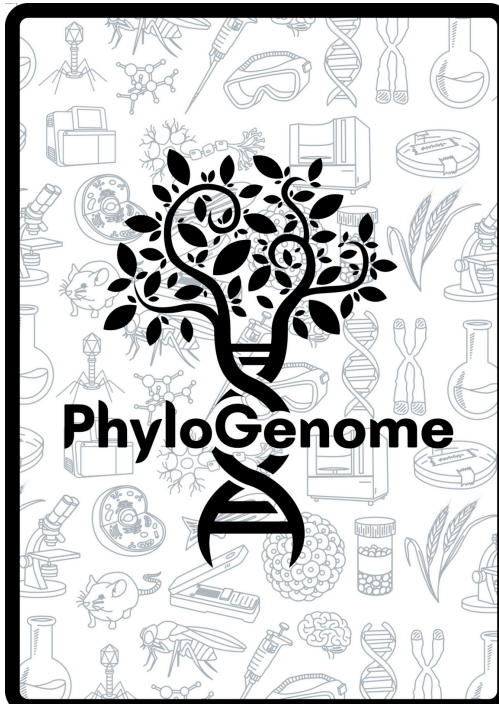
Viridiplantae, Streptophyta, Magnoliopsida



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2. Sequencing generation points: count the number of *species cards* using each sequencing generation; then multiply each total by 1, 2 and 3, respectively.

3. Special points: for the player with:

- The **longest chain of species cards** with ordered publication dates (chain must be longer than 5): **15 points**
- The **most variety of genomic interest areas** among *species cards*: **8 points**
- The **oldest publication date**; the **largest genome size**; the **highest number of protein-coding genes**; the **highest number of unique chromosomes**: **2 points each**

Detailed game rules and alternative game dynamics are available at the game's web page at phylogenome.omicsuab.org

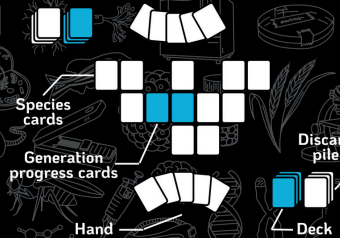
Credits: Phylogame.org, Honorah O'Neill, Funded by: Universitat Autònoma de Barcelona

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What is PhyloGenome?

PhyloGenome explores the fascinating world of genome sequencing, allowing you to decide how the history of the sequencing era will unfold. This game combines scientific concepts with strategic gameplay, where you will take turns playing sequencing projects from a vast array of potential species. The goal is to **accumulate the most points** by the end of the game.



Preparation

Pick a random card. The player whose **birthday** is closest to its publication date, starts. Then, **prepare** the game:

1. Each player sits facing each other with their deck of cards facing down next to them. The recommended composition is **25 species cards** and **10 event cards** of your choice for each player.
2. Each player places a **generation progress card** of the first generation on the table facing them side by side.
3. Each player **draws 5 cards** from their respective deck.

Player turn

Each turn is divided into 4 steps:

1. Activate your start-of-turn actions: trigger any action specified to activate "at the start of your turn"

2. Event cards affect the game dynamics. They can either be played:

- **Beneath a species card**, affecting it until either one is discarded. If the *species card* moves, the *event card* also moves.
- **On top of a species card**, affecting it momentarily and then being discarded.
- **On the table**, having a constant effect until it is discarded.
- **By**, influencing the game momentarily and then being discarded.

Detailed playing rules for each *event card* can be found at the game's web page at phylogenome.omicsuab.org.

Discarded *event cards* go to the discard pile of the player who played the card; thus, always place them facing yourself.

3. Generation progress cards track the technological advancements. Players start with a sequencing machine that is updated as the game progresses.

Common tobacco
Nicotiana tabacum

7 2



2 POINTS



The common tobacco has a move of 1.

First publication date: May 8, 2014

Genome size: 3,600 Mb

Coding genes: 61,780

Unique chromosomes: 24

Viridiplantae, Streptophyta, Magnoliopsida



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Indian cobra
Naja naja

7 3



6 POINTS



The Indian cobra has a move of 2.

First publication date: Jan 6, 2020

Genome size: 1,800 Mb

Coding genes: 23,071

Unique chromosomes: 19

Metazoa, Chordata, Lepidosauria



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Arctic fox
Vulpes lagopus

7 3



2 POINTS



The Arctic fox has a move of 1.

First publication date: Apr 21, 2021

Genome size: 2,300 Mb

Coding genes: 20,695

Unique chromosomes: 25

Metazoa, Chordata, Mammalia



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Asian cultivated rice
Oryza sativa

6 1



4 POINTS



The Asian cultivated rice has a move of 2.

First publication date: Apr 5, 2002

Genome size: 374 Mb

Coding genes: 28,738

Unique chromosomes: 12

Viridiplantae, Streptophyta, Magnoliopsida



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PhyloGenome explores the fascinating world of genome sequencing, allowing you to decide how the history of the sequencing era will unfold.

This game combines scientific concepts with strategic gameplay. Take turns playing sequencing projects from a vast array of potential species and shape the future of genomics.

8+

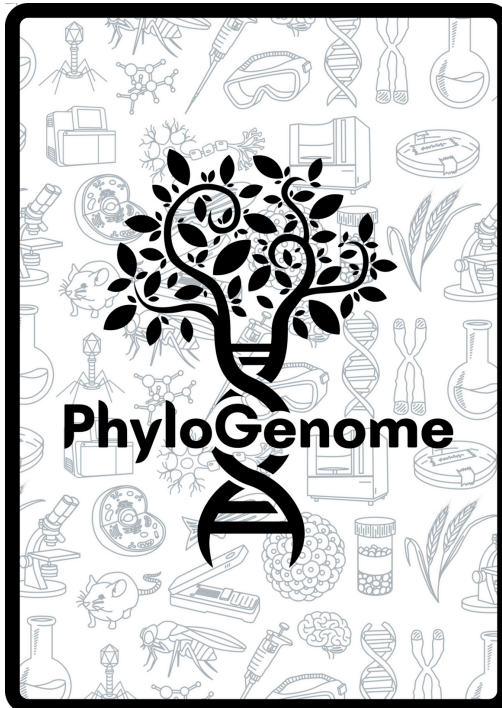
HTH
2

30'

PHYLOGENOME.OMICSUAB.ORG

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Types of cards

In PhyloGenome there are 3 types of cards:

1. Species cards are the constructing blocks of the game and the source of the points. These cards provide information about the species and its first genome sequencing project. They also provide details regarding how they are played. Discarded *species cards* go to the discard pile of the player the card was facing.

Green sea turtle
Chelonia mydas

Species

Card points

Sequencing information

Sequencing generation

Genomic interest

Movement

Taxonomy

The green sea turtle has a move of 2.

First publication date: Jul 15, 2013
Genome size: 2,350,345
Coding genes: 15,792
Unique chromosomes: 28

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2. Draw a card: draw a card from your deck and put it into your hand.

3. Actions: perform up to 3 of the following actions (you may repeat any except for playing an *event card*):

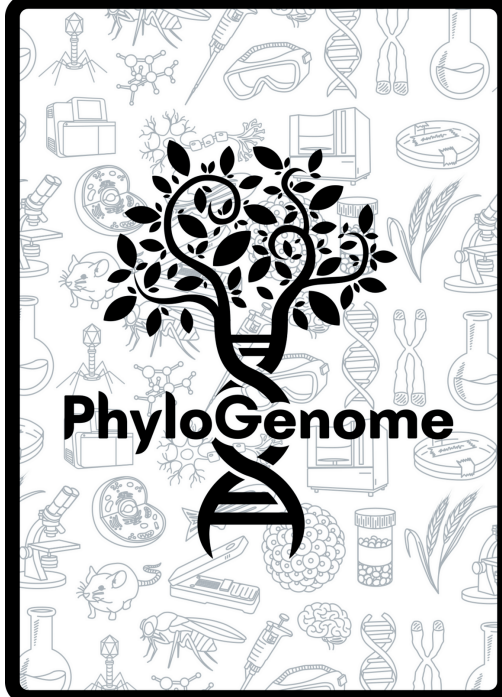
- Discard 1 card, draw 3 cards
- Play a *species card* facing you
- Move up to 2 *species cards*
- Play an *event card*

4. End of turn: the turn ends and cards in incompatible spots or disconnected from the *generation progress cards* are discarded.

Counting points

The game ends when both players have played all their *species cards*. To finish, count the points as follows:

1. Species card points: sum the points of every *species card* facing you. Apply the effects of any *event card* beneath them.



Sequencing generations

Players start the game equipped with a **first-generation sequencing** machine and progress by adding, on top of it, cards from subsequent sequencing generations (i.e., **second and third**).

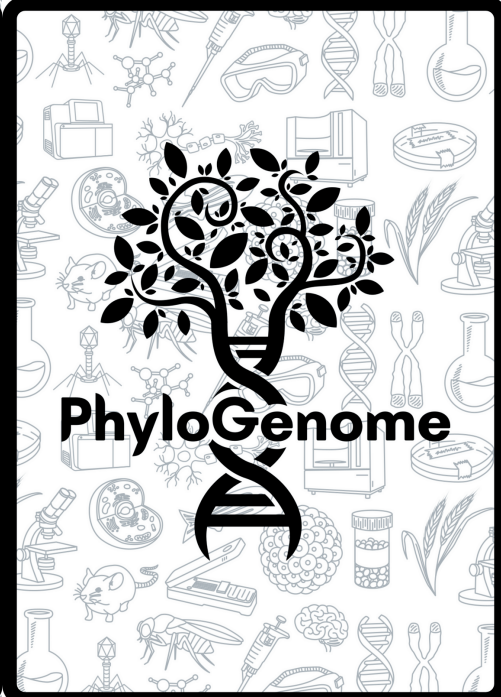
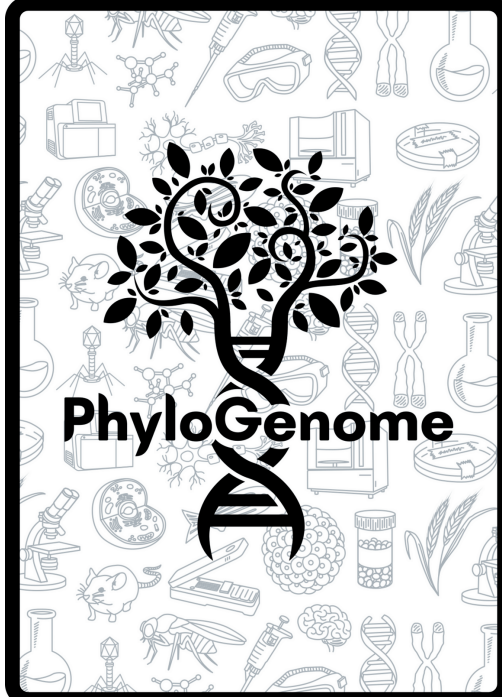
The required sequencing generation for playing a *species card* is indicated in the top right circle of the card. To progress to the next sequencing generation, you need **at least 4 *species cards* in game facing you from the previous generation**. If you end up with 3 or fewer cards facing you of a certain generation due to discards, **that sequencing generation's advancement is lost** and you can only play cards from the previous generations until you meet the 4 cards requirement. However, any *species cards* already played stay in-game. You can also jump from third to first sequencing generation in this way.

Compatibility

In-game cards in PhyloGenome must be **compatible with the cards adjacent to them**. When playing a *species card*, adhere to the following requirements:

- **Genome scale compatibility:** the genome scale of the played card and all adjacent cards must share the same number of have a difference of one.
- **Sequencing generation limit:** you may only play cards up to your current sequencing generation technology.

Actions may lead to incompatible connections or empty spaces, resulting in a section of the cards becoming disconnected from the *generation progress cards*. In such cases, each player has until the end of their next turn to fix it. If they don't, **all disconnected or incompatible cards are discarded**.



PhyloGenome
PHYLOGENOME.OMICSUAB.ORG