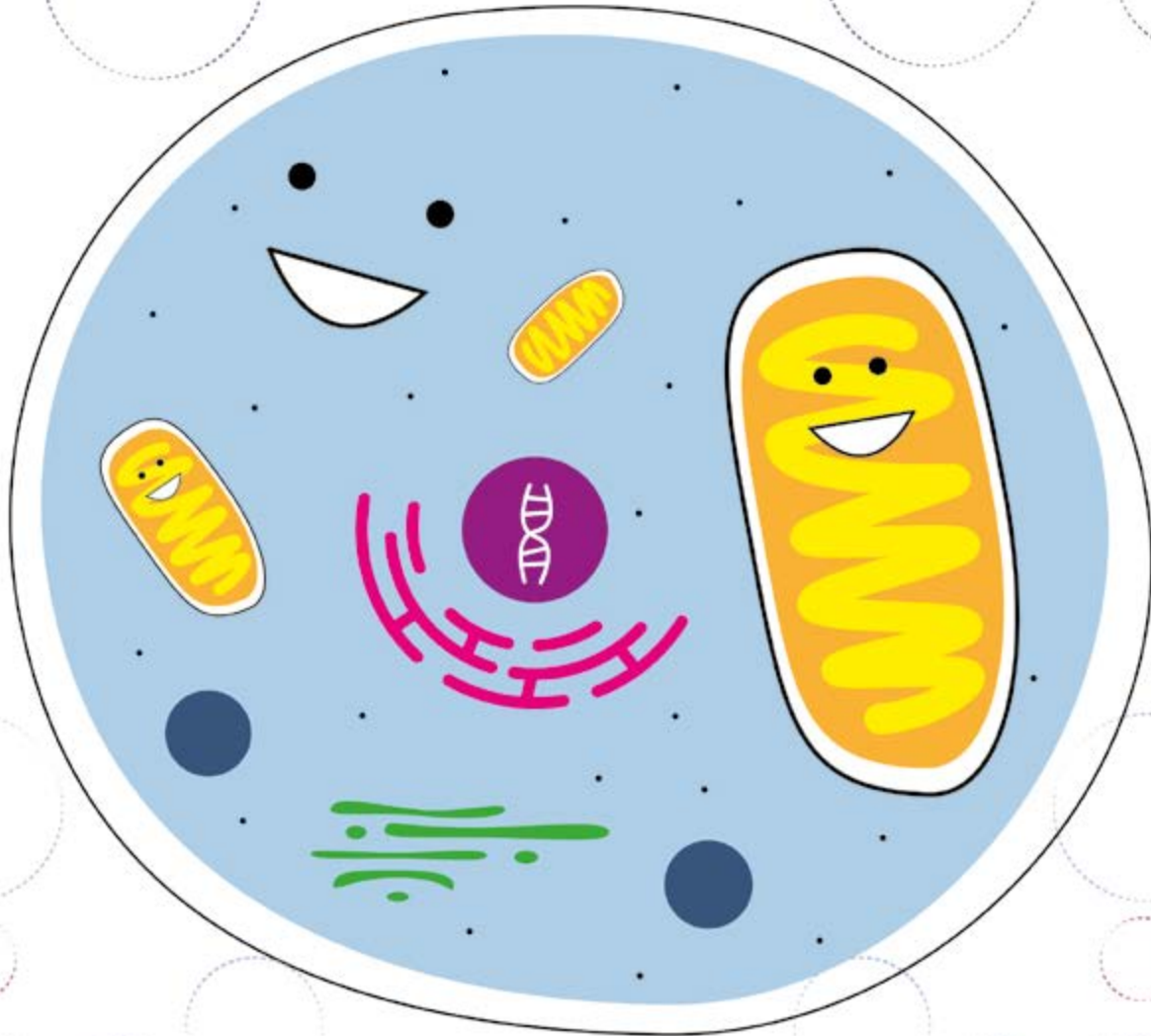


TRANSMIT: THE ROAD TO MEET MITOS



TRAINING+RESEARCH+DISSEMINATION

LET'S PLAY WITH MITOS!

A BOOK FOR CHILDREN TO DISCOVER MITOCHONDRIA

Why a children book to introduce the role of Mitochondria in Cancer? Because it helps to explain key concepts in a fun and interactive way, thus kids can embrace science without thinking about it.

Ana, Catarina, Christina, Daniela, Floriana, Houda, Luca, Maheshwor, Nicole, Nikkitha and Saharnaz study mitochondria, the “power house” of the cell. What is a mitochondrion? How does it work? What happens to unhealthy mitochondria? Our young readers will find the answers in this booklet, while enjoying the interactive activities proposed in it. Moreover, they will meet the TRANSMIT young scientists and get to know how they play with Science all around Europe. We believe science should be inspiring and exciting.

TRANSMIT is funded within the frame of the H2020 MARIE CURIE ITN and is a multi-partner project with beneficiaries from 7 different countries. We come from all over the world and we work in the field of cancer research.

This booklet is dedicated to all children and adults who suffer from the unpleasant disease called cancer and also to all the people involved

or simply interested in learning something more about it.

Please read, colour and play with this book together with your child. We hope that this booklet will help you and your children to better understand the role of mitochondria in cancer.

Welcome to our world and enjoy your adventure with your new friend Mito!

*The TRANSMITers
and the TRANSMIT Consortium*

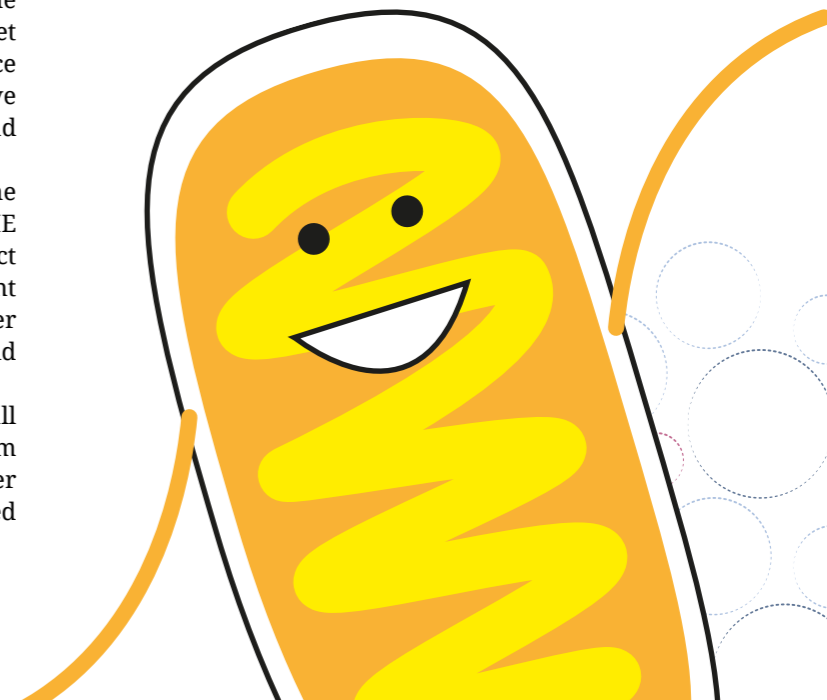


TRANSMIT
Translating the role
of Mitochondria
in Tumorigenesis



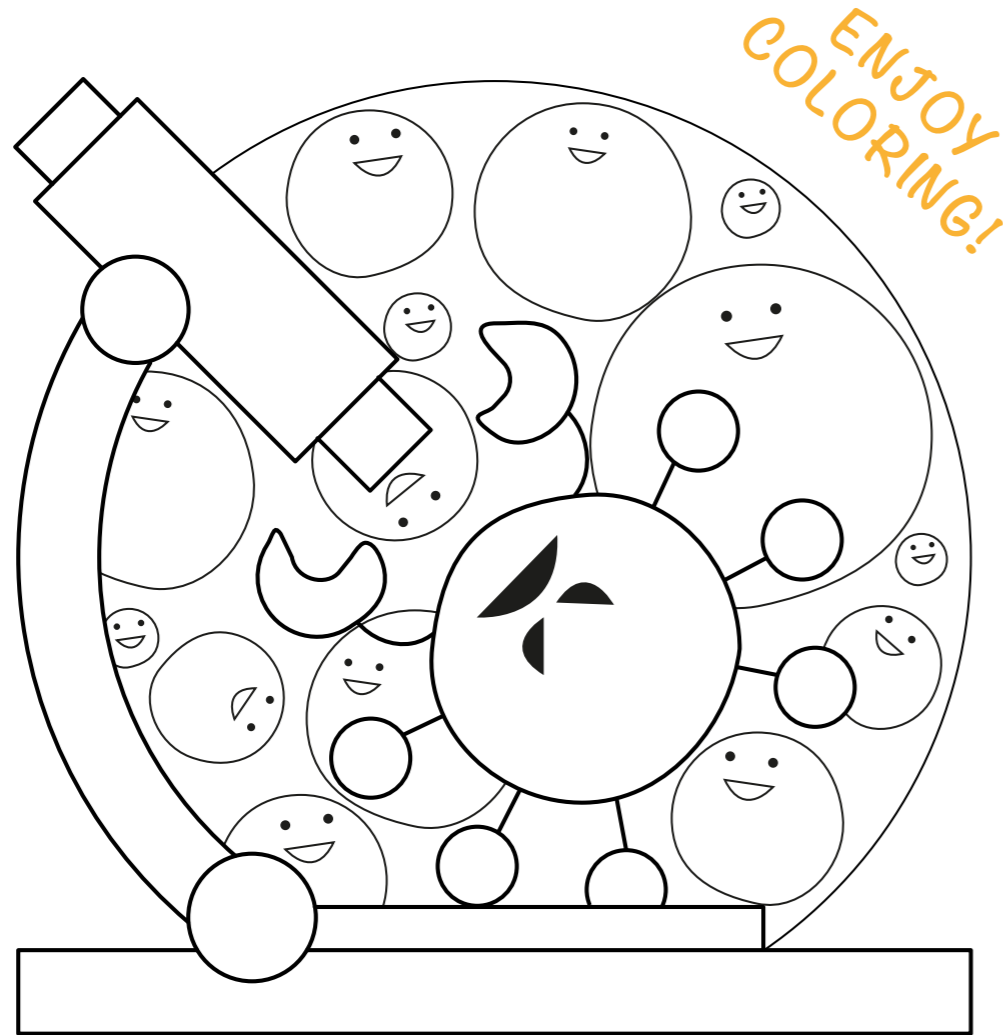
**Marie Skłodowska-Curie
Actions**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 722605



BODY'S BUILDING BLOCKS

OUR BODY IS MADE OF CELLS.
SEE WHAT A CELL LOOKS LIKE!

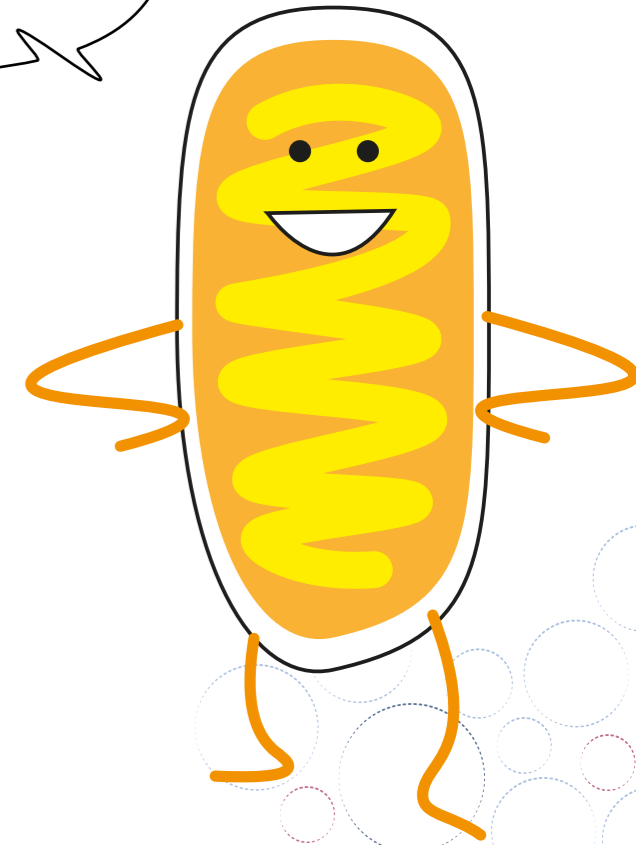


MEET THE MITO

HI, I AM THE MITOCHONDRION*,
A SMALL PART OF THE CELL. DO YOU
WANT TO LEARN MORE ABOUT CELLS
AND THEIR FUNCTION?

WE CAN VISIT MY FRIENDS
FROM TRANSMIT,
THEY ARE ALL
RESEARCHERS TRYING TO
UNDERSTAND HOW OUR
CELLS WORK.
COME AND FOLLOW ME.
BY THE WAY, YOU CAN
CALL ME MITO!

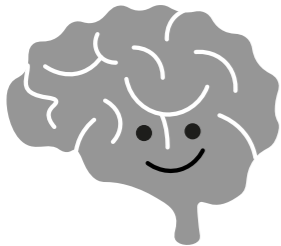
* MITOCHONDRION is the energy maker in a cell



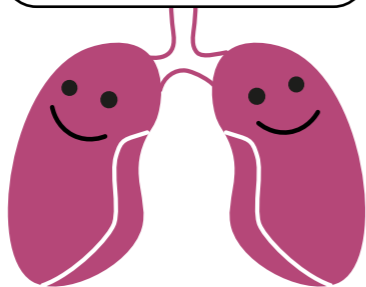
OUR ORGANS

OUR BODY IS MADE OF ORGANS LIKE THE HEART, THE BRAIN...
DO YOU KNOW THEM? FILL IN THE BLANKS!

MY NAME IS...



I TELL YOUR BODY
WHAT TO DO



FROM AIR, WE TAKE
OXYGEN FOR CELLS



I SEND BLOOD
AROUND YOUR BODY



I CLEAN YOUR
BLOOD

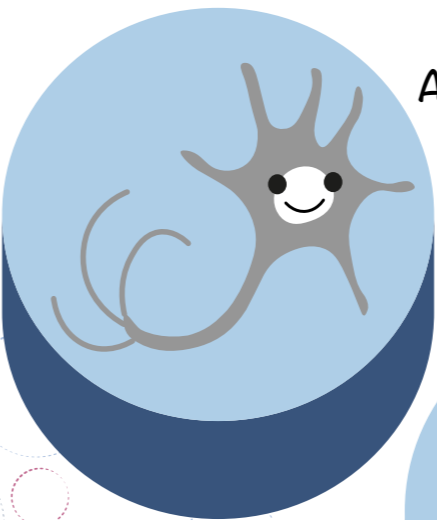


I ABSORB NUTRIENTS
FROM THE FOOD YOU EAT



I BREAK DOWN
AND DIGEST FOOD

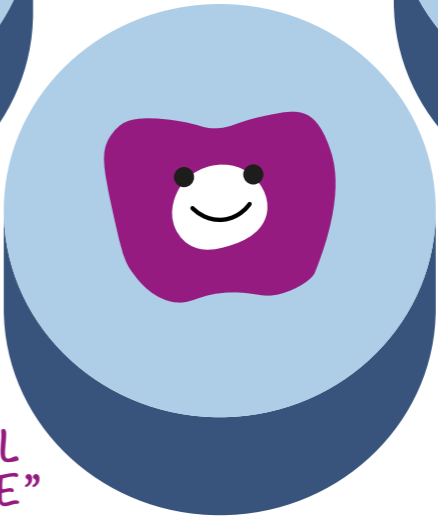
CELL TYPES



A NERVE CELL
"NEURON"

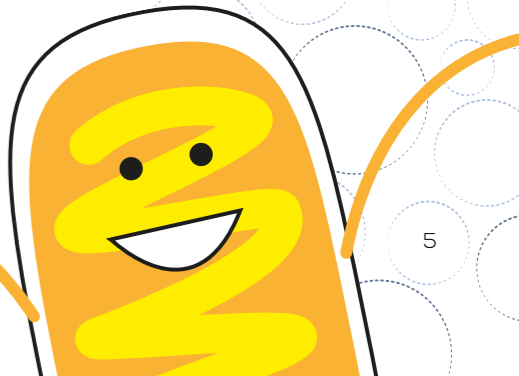


AN INTESTINAL
CELL
"ENTEROCYTE"



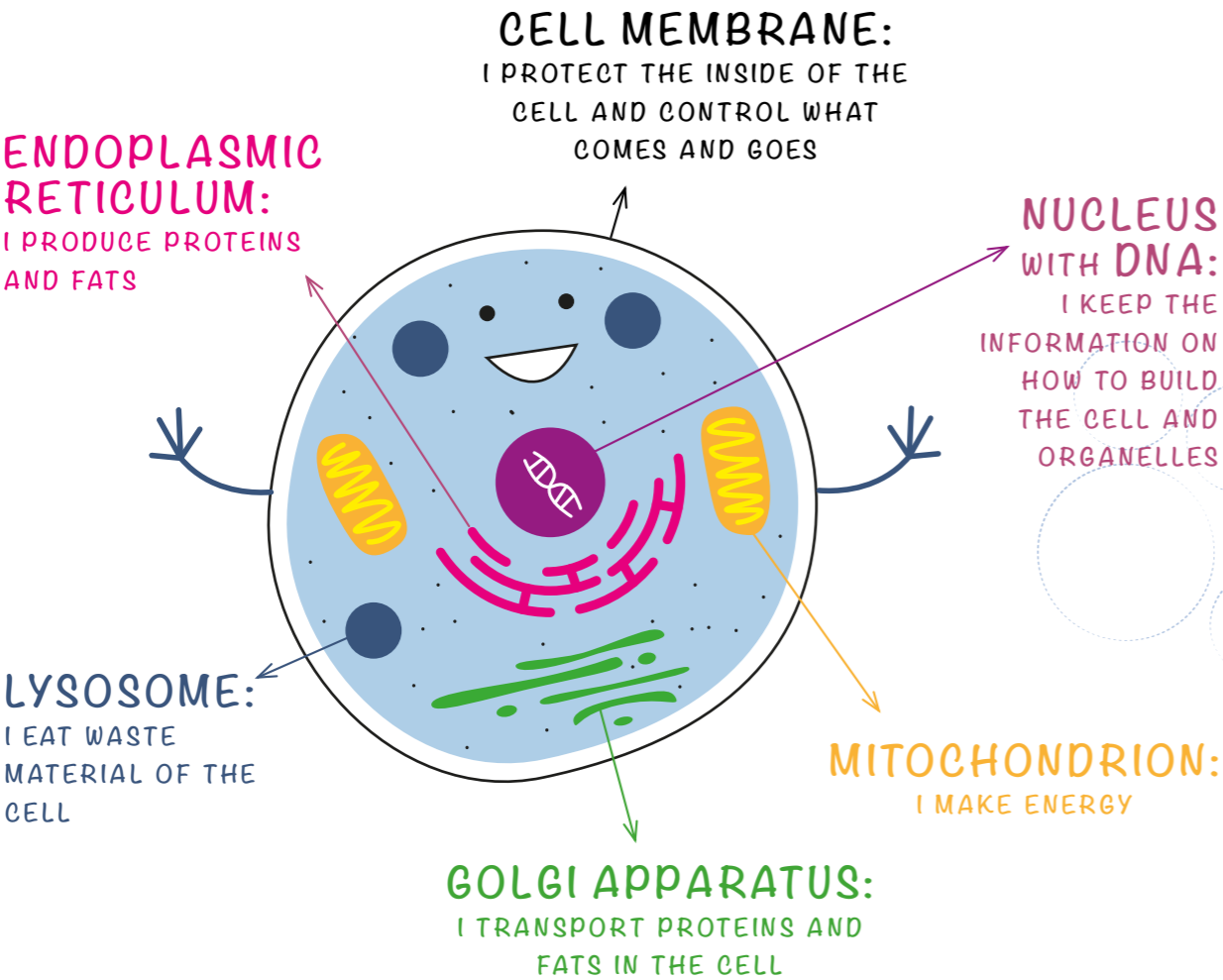
A LIVER CELL
"HEPATOCTE"

ALL THESE ORGANS
ARE MADE OF CELLS!!



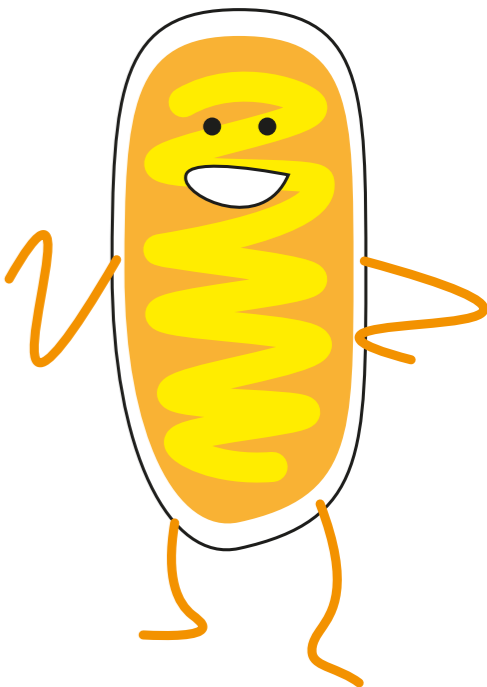
THE ORGANELLES

LIKE OUR BODY HAS ORGANS, A CELL HAS ORGANELLES
LET'S DISCOVER THEIR FUNCTIONS!



CAN YOU HELP ME FIND THE
COMPONENTS OF THE CELL
IN THE WORD SEARCH?

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | G | F | D | U | L | W | Z | X | J | R | Z | A | E | B |
| V | I | B | B | M | E | B | Q | H | R | F | O | R | N | E |
| X | V | W | V | L | C | Y | G | K | Q | D | P | Y | A | M |
| J | V | U | V | E | E | R | Q | S | A | D | N | C | R | S |
| N | O | I | R | D | N | O | H | C | O | T | I | M | B | N |
| A | A | C | A | S | O | M | V | G | E | E | F | V | M | R |
| E | D | O | H | F | M | I | S | M | C | P | X | O | E | Z |
| X | G | Q | N | F | V | U | Q | A | S | Q | Q | J | M | D |
| K | P | U | A | M | M | H | Q | U | L | P | O | C | I | N |
| C | V | O | Q | E | L | L | E | U | T | P | F | D | A | E |
| P | H | D | P | G | O | L | M | G | R | Q | O | S | I | F |
| A | X | E | X | K | C | D | N | A | L | Q | H | T | E | V |
| U | H | D | D | U | Q | U | P | Z | M | B | O | Y | Y | E |
| P | J | S | N | U | G | F | A | N | N | M | L | U | C | C |
| S | U | R | V | K | J | P | R | M | S | B | Z | O | Q | Z |

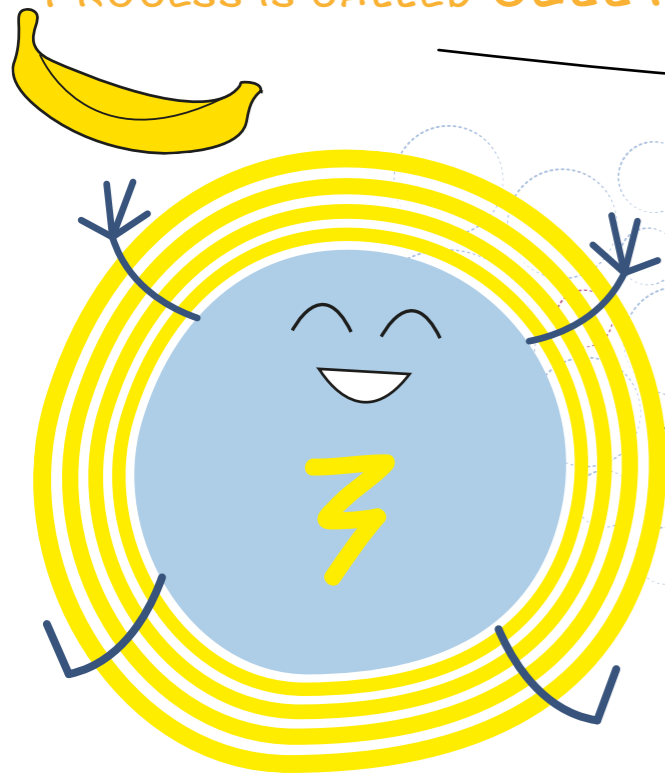


CYTOPLASM
DNA
MEMBRANE
MITOCHONDRION
NUCLEUS

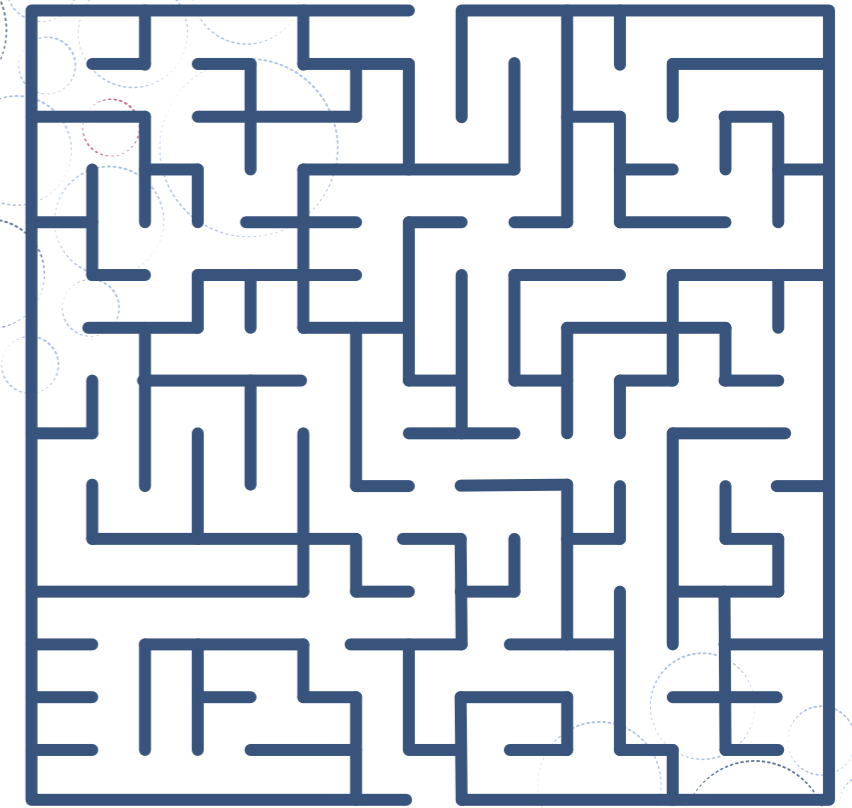
THE MITOCHONDRION

EVERYDAY WE EAT FOOD THAT IS BROKEN DOWN AND TRANSFORMED IN DIFFERENT WAYS.

My JOB IS TO
TRANSFORM FOOD INTO ENERGY USING
MAGIC WANDS CALLED ENZYMES. THIS
PROCESS IS CALLED CELL METABOLISM



CAN YOU HELP ME TO BREAK DOWN FOOD TO MAKE
ENERGY? FIND THE WAY OUT!

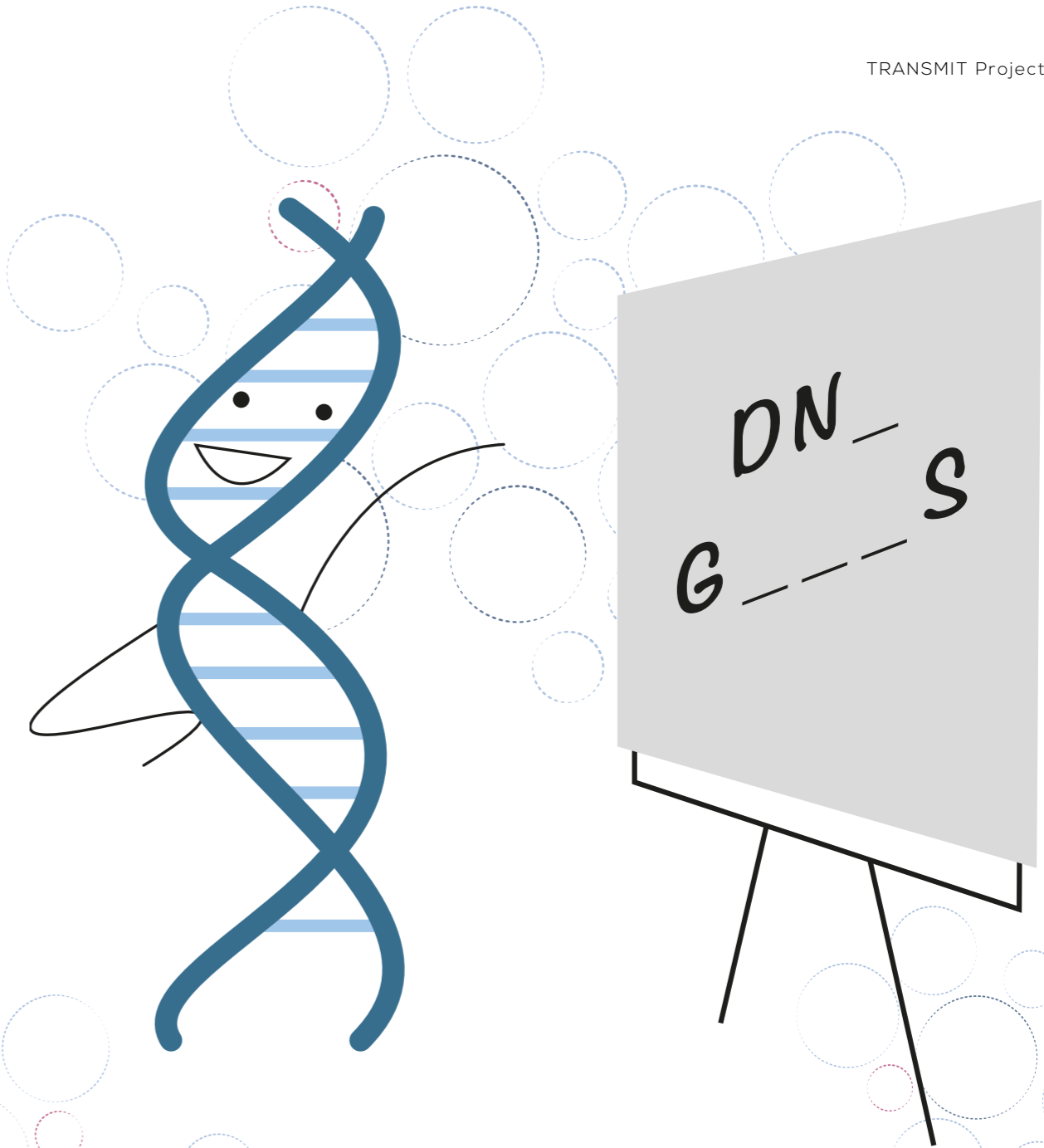
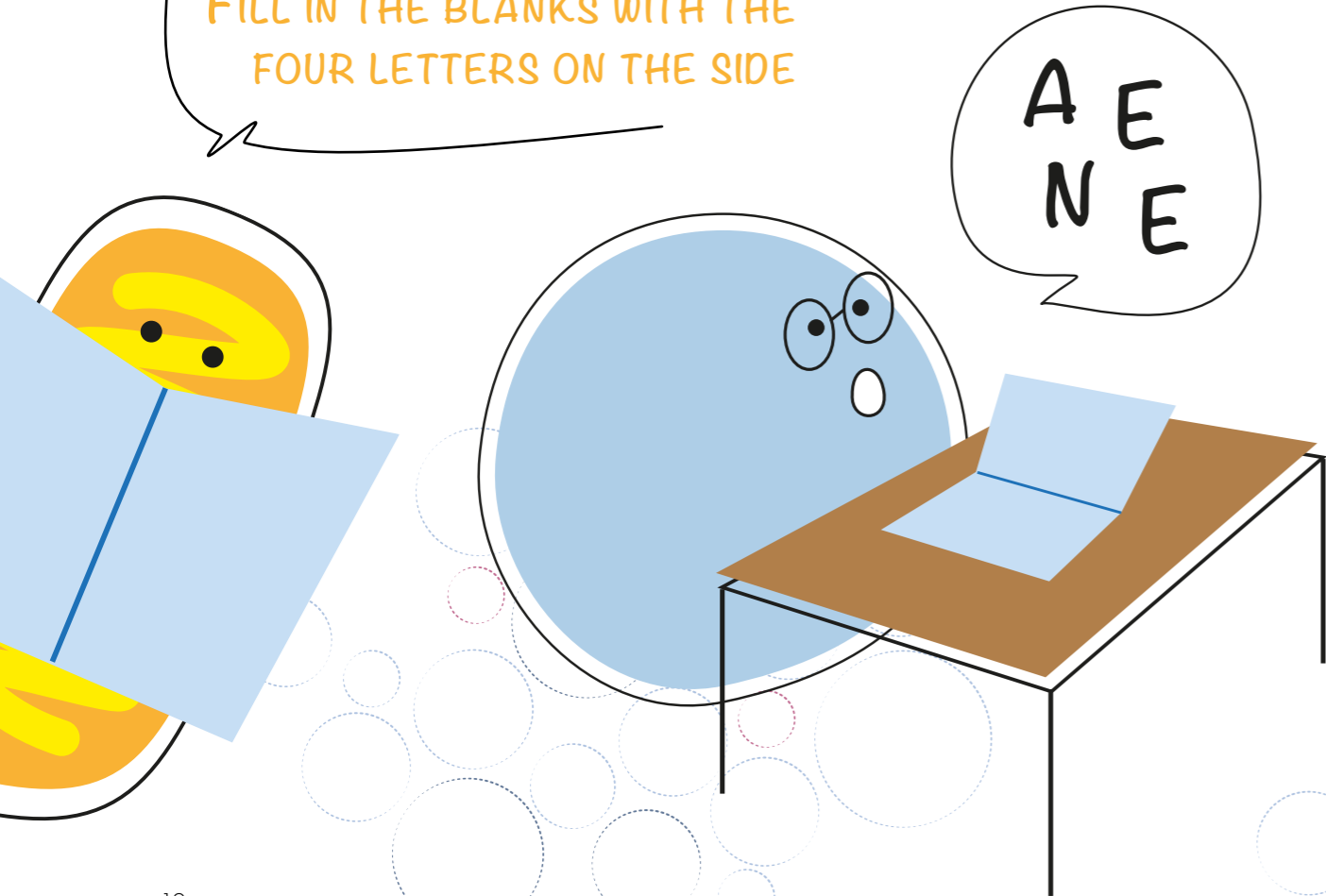


ENERGY

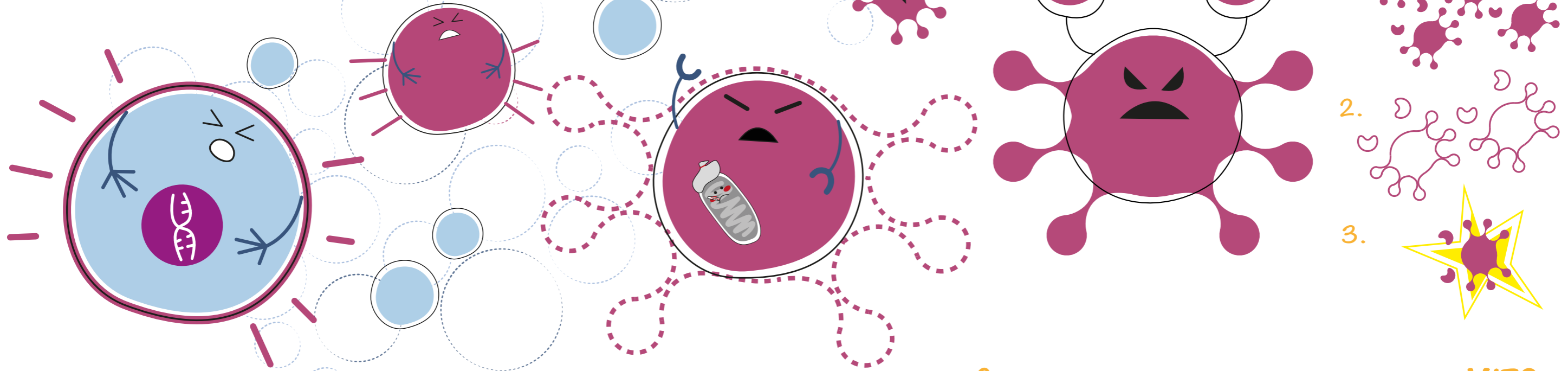
THE DNA

AS YOUR SCIENCE BOOK HAS INSTRUCTIONS, THE DNA HAS GENES.
YOU CAN THINK OF DNA AS A LIFE INSTRUCTION MANUAL TELLING CELLS
HOW THEY ARE BUILD AND RUN, AND WHAT THEIR JOB IN THE BODY IS.

FILL IN THE BLANKS WITH THE
FOUR LETTERS ON THE SIDE



WHAT'S WRONG?



SOMETIMES CELLS MAY HAVE A **DAMAGE** IN THEIR **DNA** THAT CANNOT BE REPAIRED, LEADING TO A DISEASE CALLED **CANCER**

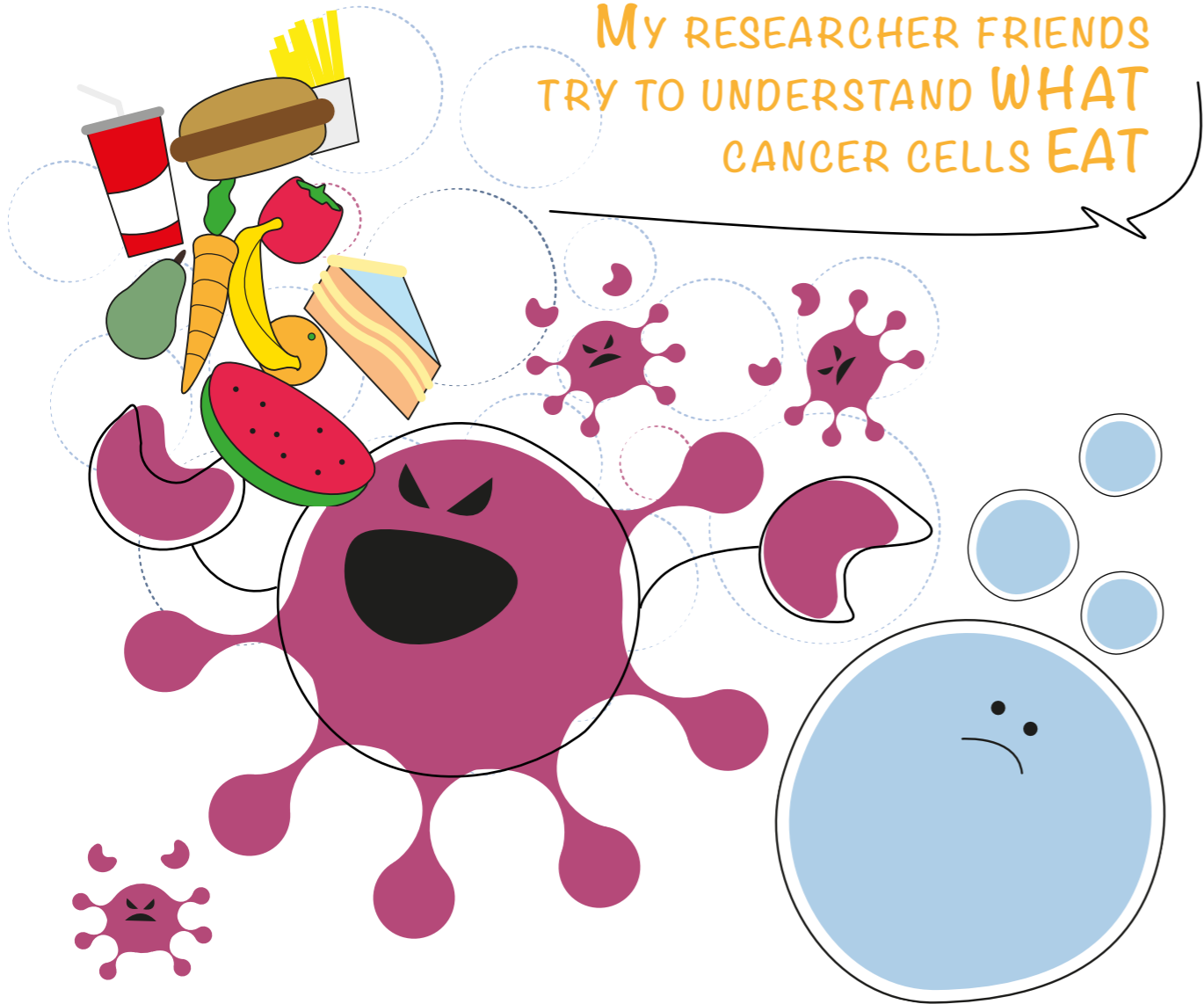
CELLS MAY ALSO HAVE A DAMAGE IN THEIR **MITOS**, WHICH CONTRIBUTES TO SOME SPECIAL ABILITIES:

1. GROWING VERY FAST
2. HIDING FROM THE BODY SENTINELS
3. USING NUTRIENTS IN A DIFFERENT WAY

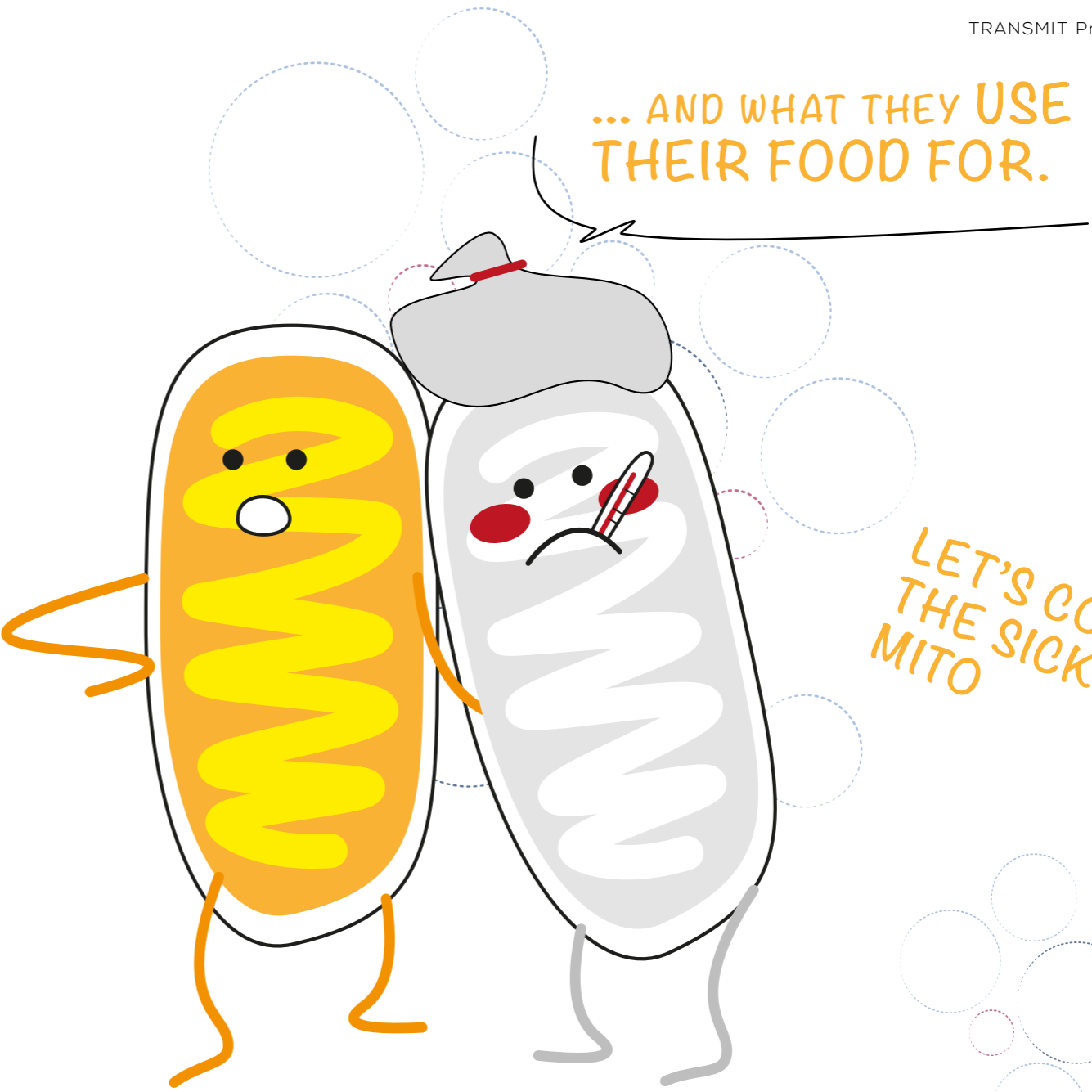


CANCER & METABOLISM

My RESEARCHER FRIENDS
TRY TO UNDERSTAND WHAT
CANCER CELLS EAT



... AND WHAT THEY USE
THEIR FOOD FOR.



LET'S COLOR
THE SICK
MITO

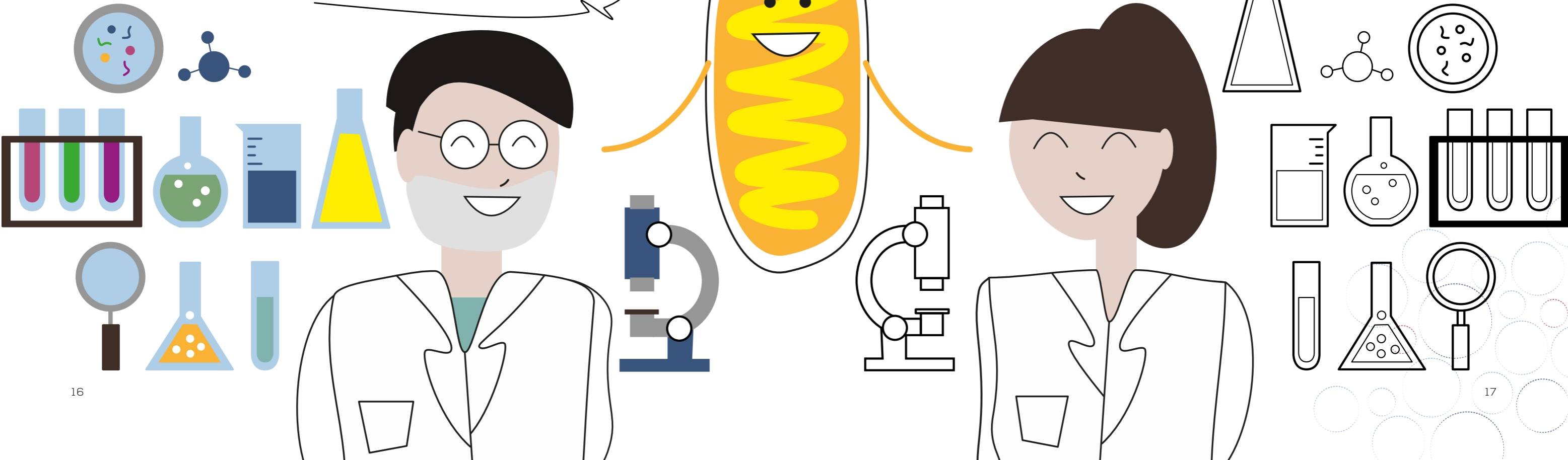
FINDING SOLUTIONS

WHY RESEARCHERS ARE SO IMPORTANT

IN ORDER TO HELP PEOPLE WHO HAVE CANCER, RESEARCHERS TRY TO UNDERSTAND HOW THESE CELLS CAN GROW AND SURVIVE.

THEY STUDY CANCER IN A LABORATORY. THEY ALSO TRY TO MAKE MEDICINES THAT WILL DESTROY CANCER CELLS

ENJOY COLORING!

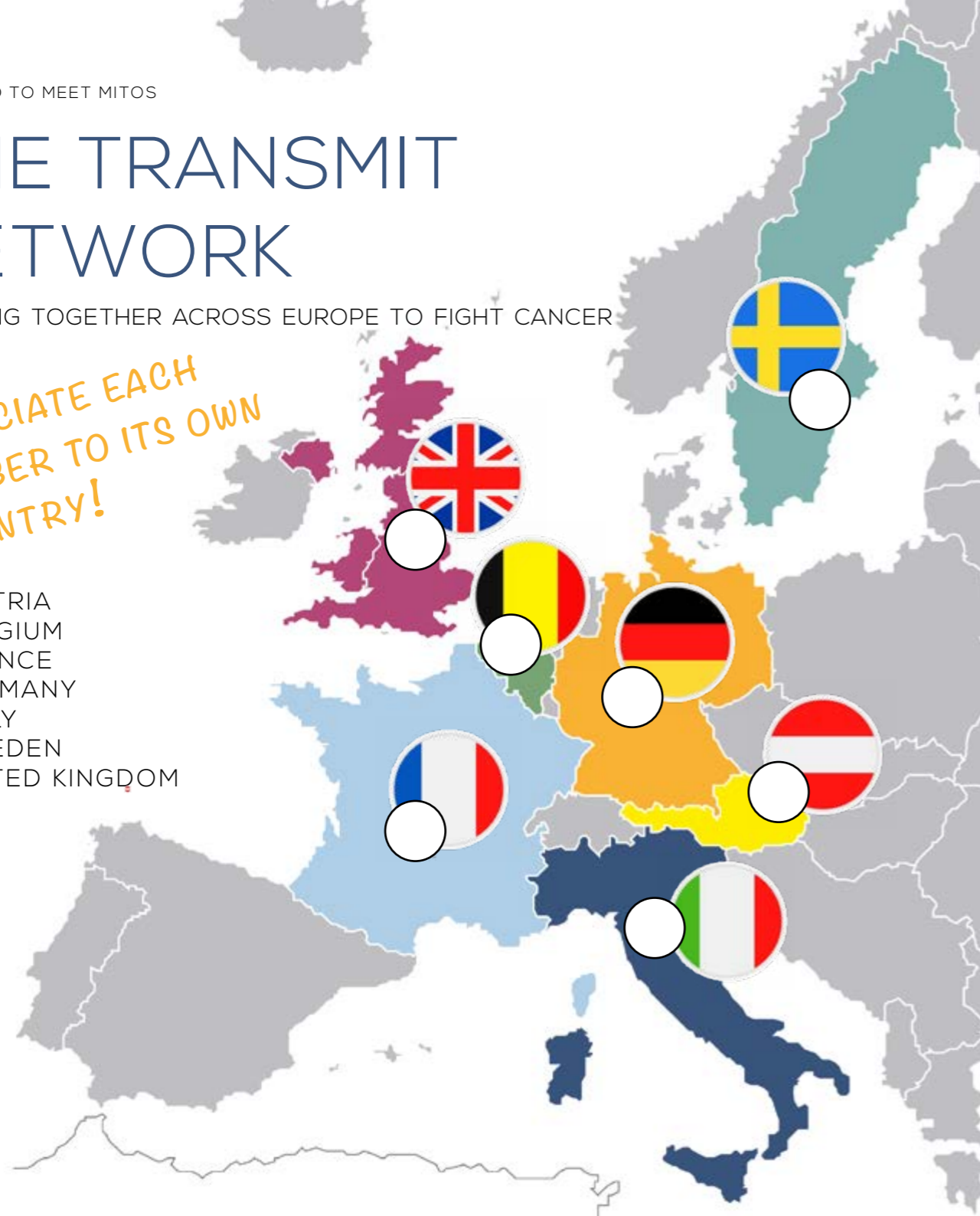


THE TRANSMIT NETWORK



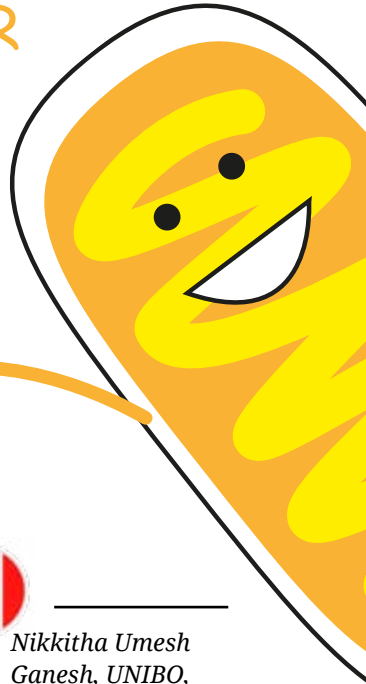









WORKING TOGETHER ACROSS EUROPE TO FIGHT CANCER

ASSOCIATE EACH
NUMBER TO ITS OWN
COUNTRY!

1. AUSTRIA
2. BELGIUM
3. FRANCE
4. GERMANY
5. ITALY
6. SWEDEN
7. UNITED KINGDOM




THESE ARE ALL MY RESEARCHER FRIENDS
FROM THE TRANSMIT NETWORK. THEIR
STRENGTH IS THAT THEY WORK TOGETHER
TO FIGHT CANCER.
MEET THE TEAM
AND GUESS WHERE THEY WORK!

| | | | |
|---|--|---|---|
|  <p>FRANCE Saharnaz Sarlak, UBOR</p> |  <p>Houda Abia, UNIBO, FaBiT</p> |  | |
|  <p>Ana Carolina Bastos Sant'Anna Silva, OROBOROS</p> |  <p>Luca Zampieri, UCL</p> | |  <p>Nikkitha Umesh Ganesh, UNIBO, DIMEC</p> |
|  <p>Floriana Jessica Di Paola, JLU</p> |  <p>Daniela Weber, SALK</p> | |  <p>Nicole Bezuidenhout, KI</p> |
|  <p>Ana Catarina da Silva Almeida, ACS</p> |  <p>Christina Schmidt, UCAM</p> | |  <p>Maheshwor Thapa, BIOCRATES</p> |


SOLUTIONS

MY NAME IS...


BRAIN




LUNGS




HEART




LIVER

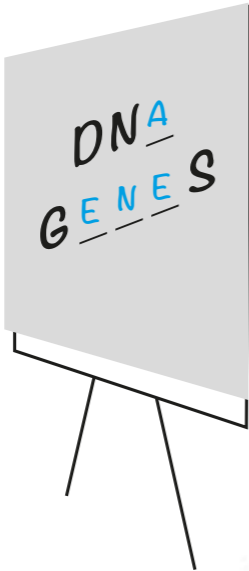
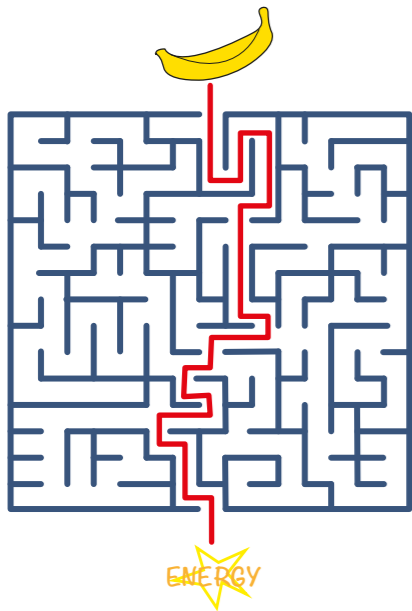


INTESTINE



STOMACH





| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | G | F | D | U | L | W | Z | X | J | R | Z | A | E | B |
| V | I | B | B | M | E | B | Q | H | R | F | O | R | N | E |
| X | V | W | V | L | C | Y | G | K | Q | D | P | Y | A | M |
| J | V | U | V | E | E | R | Q | S | A | D | N | C | R | S |
| N | O | I | R | D | N | O | H | C | O | T | I | M | B | N |
| A | A | C | A | S | O | M | V | G | E | E | F | V | M | R |
| E | D | O | H | F | M | I | S | M | C | P | X | O | E | Z |
| X | G | Q | N | F | V | U | Q | A | S | Q | Q | J | M | D |
| K | P | U | A | M | M | H | Q | U | L | P | O | C | I | N |
| C | V | O | Q | E | L | L | E | U | T | P | F | D | A | E |
| P | H | D | P | G | O | L | M | G | R | Q | Q | S | I | F |
| A | X | E | X | K | C | D | N | A | L | Q | H | T | E | V |
| U | H | D | D | U | Q | U | P | Z | M | B | O | Y | Y | E |
| P | J | S | N | U | G | F | A | N | N | M | L | U | C | C |
| S | U | R | V | K | J | P | R | M | S | B | Z | O | Q | Z |



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