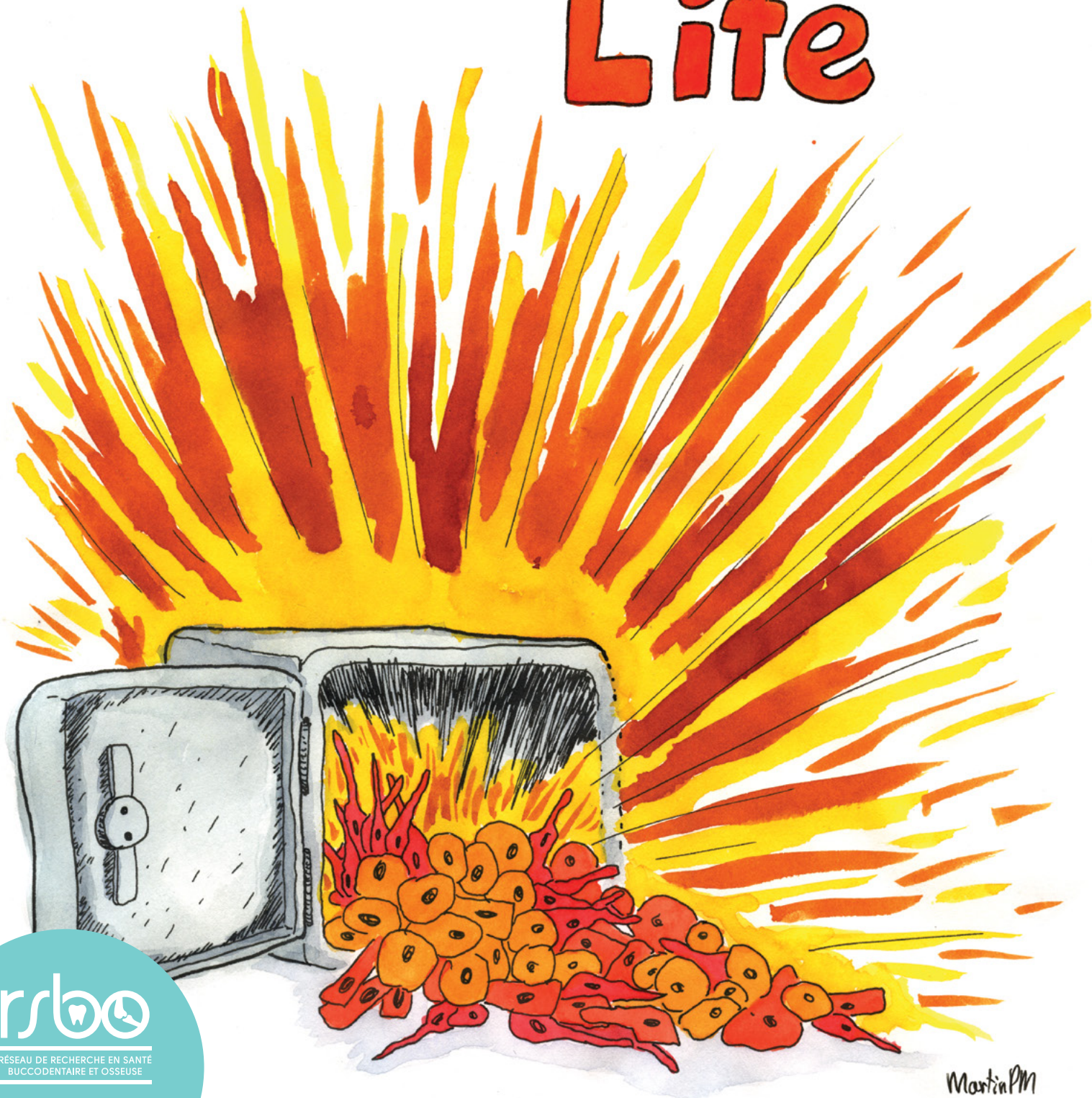


A Bank benefiting Life



FOREWORD

Science is intimidating for the average person. Scientific studies are all too often explained in a clinical manner, the subject matter is advanced and complicated to understand... Consequently, it is easy to believe, wrongly, that researchers are disconnected from the general public. Their projects, therefore, remain generally unrecognized and unappreciated, while false information flourishes and becomes more attractive.

Research into oral and bone health is particularly unpopular. There is a general tendency toward denial: this field of expertise elicits aversion, since it is too often associated with pain (fractures) or even disgust (oral infections, oral cancer, etc.).

This collection has the mission of reversing this tendency by informing you of major advances in the field. We want to show you what health research is and share our passion with you. Research is one of the drivers of humanity, but researchers must better communicate and explain how their work contributes to the welfare of individuals, the environment, and society.

In order to highlight the research and its members in an original way, the Network for Oral and Bone Health Research (RSBO for "Réseau de recherche en santé buccodentaire et osseuse") retained two artists in residence, Daniel Ha and Martin PM. For more than a year, Daniel and Martin met with our researchers across Quebec and visited their labs. In the following pages, you can read and enjoy their comics, and thereby discover along with them, the extraordinary work being done by our researchers.

We hope that these pages will inspire you and allow you to see the scientific research in the field of oral and bone health with new eyes. Perhaps it will elicit among the younger crowd the desire to study the sciences and, who knows, become researchers themselves?

RSBO Art and Science Committee

Dr. Christophe Bedos, RSBO Director

Dr. Argerie Tsimicalis, Researcher and RSBO Member

Dr. Marta Cerruti, Researcher and RSBO Member

Dr. Andrée Lessard, RSBO Manager

Martin Patenaude-Monette, RSBO Artist in Residence

Daniel Ha, RSBO Artist in Residence

WHAT IS IT?

WHAT IS THE RSBO?

For more than 25 years, the Network for Oral and Bone Health Research (RSBO for “Réseau de recherche en santé buccodentaire et osseuse”) tirelessly supports Quebec researchers and their students in the pursuit of excellence in fundamental, clinical, and epidemiological research. The Network numbers more than 100 researchers and over 300 students predominantly from McGill University, Université de Montréal and Laval University, as well as their affiliated hospitals (notably CHU Sainte-Justine, Shriners Hospitals for Children-Canada, Montreal General Hospital, Jewish General Hospital and Montreal Sacred Heart Hospital).

The RSBO network is funded primarily by the “Fonds de recherche du Québec – Santé” (FRQS). It also relies on partnerships with associates from different backgrounds, notably professional organizations in the field of oral and bone health as well as associations which represent the most underprivileged people in our society. This is how the RSBO network brings together the stakeholders in our social fabric – scientific community, clinicians, populations and users of healthcare services, as well as administrators, decision makers and industries – with an eye toward producing knowledge on health and oral and bone diseases, but also to take this knowledge and apply it.

The actions of the RSBO network fall within the national strategies for promoting health as well as those set forth by the World Health Organization. The Network aims to promote the health and welfare of the Quebec population, to reduce inequalities in healthcare, but also to contribute to the economic and social vitality of Quebec. Actions taken by the RSBO network can, in fact, stimulate the retention or return to employment of more vulnerable people, develop highly qualified personnel, generate the development of new technologies, or encourage scientific entrepreneurship and the production of patents.

Transmitting knowledge is one of the major goals of the RSBO network. This is why we created the Art and Science Committee, which promotes scientific research and health of the Quebec society through the arts. The RSBO network considers that sciences and the arts, far from being antithetical, can in fact mutually feed each other, combine, and ultimately, benefit the entirety of the population.

ART & SCIENCE

This comic collection is a creative and original way to raise awareness in our fellow citizens about research done here, especially on a subject like oral and bone health, which can be quite off-putting for the uninitiated. And yet, the research we are doing is fundamental for all of us.

The idea of doing a collection of comics is exactly right coming from the RSBO Art and Science Committee, and a great approach to demystifying everything that happens in our mouth, from the effect of sugar on our teeth to oral ecology, as well as 3D technology to foster stronger bones, and other activities which take place between our nose and our chin...

Due to its excellence in research, the Network is supported by the "Fonds de recherche du Québec - Santé" (FRQS). It seems so very pertinent and important to me that the general public better understand the research being done since, in the end, it is they who benefit from it, even if they don't realize it.

At a more basic level, it is important to raise awareness concerning science and research in the general population: the methods, approaches, questions, and uncertainly, but also the discoveries, results, and accomplishments! It is important to increase the number of opportunities to present science to the population, young or old, so that scientific expertise becomes the first instinctive source we turn to when we ask questions on any particular subject. Calling on art is definitely a good way to stimulate curiosity.

I commend the Network for its initiative in raising awareness for its expertise and projects, and perhaps generating interest among the new generations of students who are wondering about their future. Who knows? Perhaps, despite a little bit of apprehension, this comic collection might help you better appreciate your next visit to the dentist!

*Rémi Quirion,
Chief Scientist of Quebec*

A BANK BENEFITING LIFE



ABDELHABIB SEMLALI, PH. D.

*Assistant Professor, Faculty of Dentistry at Laval University
In charge of the Oral Tissues Biobank, Laval University*

Imagine waking one morning with the brilliant idea for developing a treatment for cancer. Are you going to test your solution on your little brother? On your pet? A really bad idea, right? It would be better to test your compound on cancer cells and then compare the results against normal cells. But where do we find such material? Banks are part of our everyday lives, but some of them are unique. Visit Dr. Abdelhabib Semlali's at Laval University. Transactions are made from cell to cell, and the goal is to preserve biological health and the withdrawals of a maximum number of people.

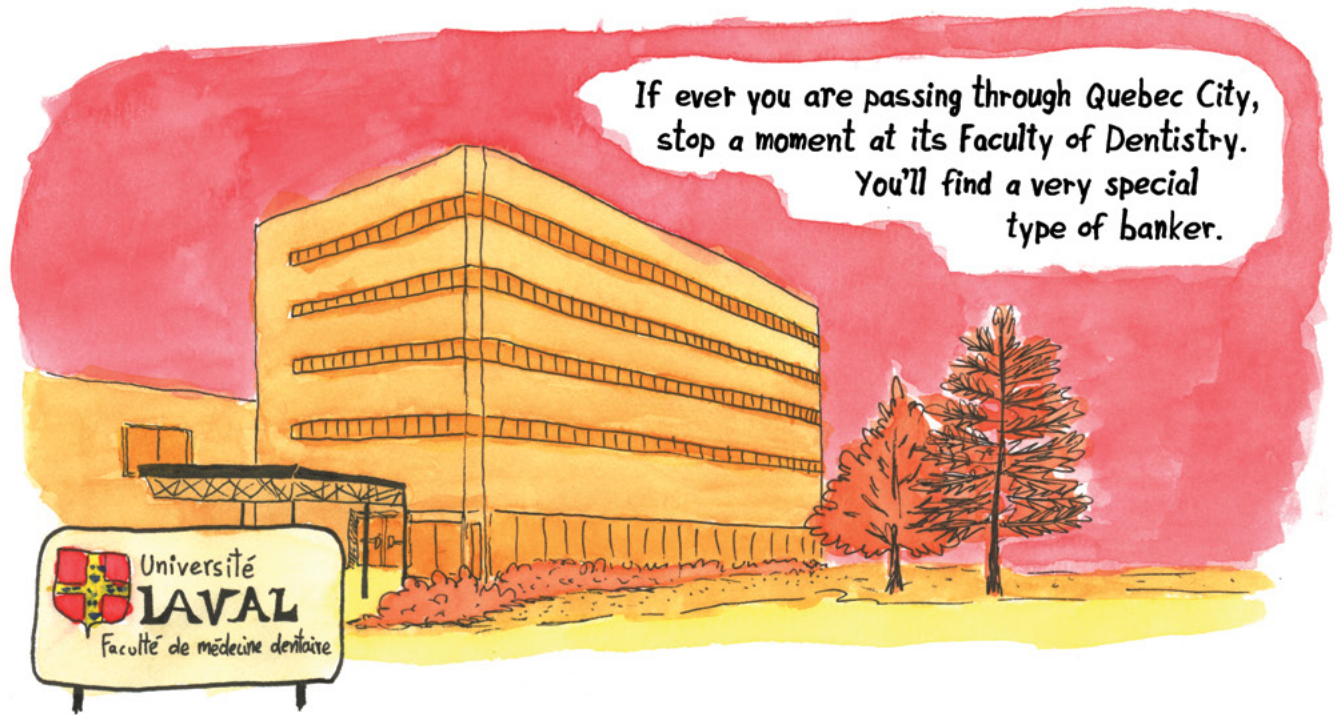


MARTIN PM

Martin Patenaude-Monette, also known as Martin PM, hails from Montreal. He brushes his teeth at least twice a day, but usually three times. However, he is not quite as rigorous when using dental floss, which he consents to using occasionally, especially when he has a piece of popcorn stuck between his teeth. Curious by nature, he is interested in scientific research, social issues, and politics. He sees comics as a powerful medium for addressing scientific and social issues, by combining text and images.

www.martinpm.info

[instagram.com/martinpm.bd](https://www.instagram.com/martinpm.bd)



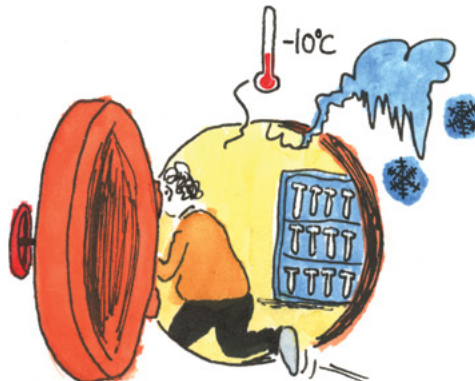
Professor Abdelhabid Semlali manages a biobank.

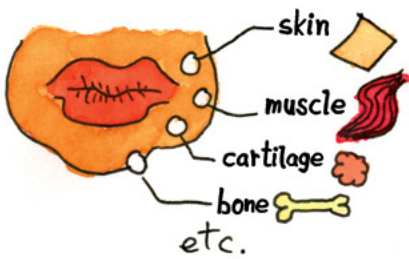
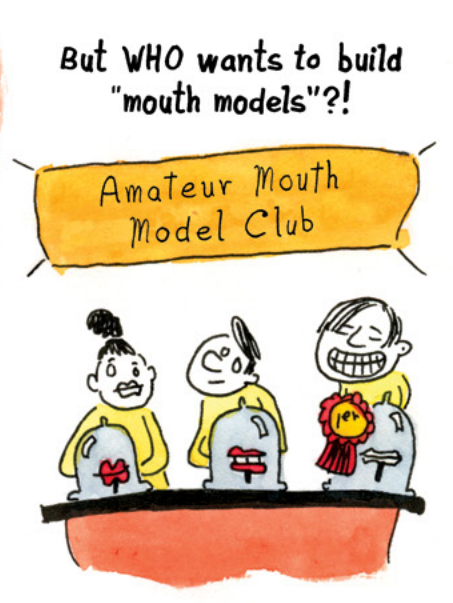


It's not a bank where one can find money.

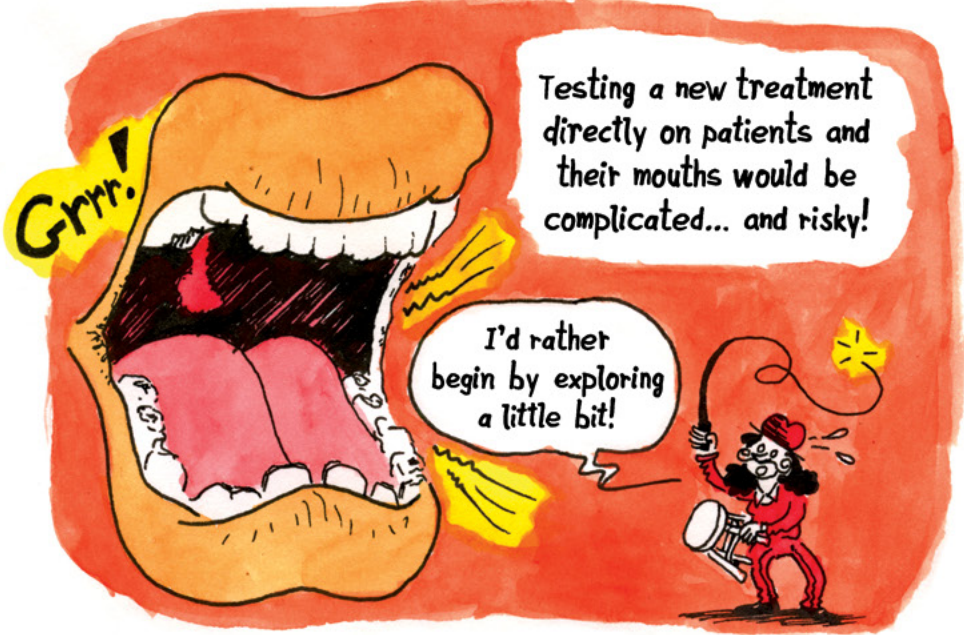
It contains a collection of cells from the mouth.

Oral cells of every type, some healthy, some cancerous.





And each tissue is composed of different types of cells.



This is why researchers begin by isolating the cell they're interested in.

It's a lot less daunting!



With this "simplified model", they can begin experimenting.



Two of my loved ones died because of cigarettes and alcohol.



Abusing these two substances often leads to oral cancer. It makes sense that my work focuses on this cancer and new treatments for it.



In terms of treatment, we hear so many stories which give us false hope.

Don't need to look long and hard: my aunt recovered from her cancer by eating turmeric!



That's wonderful for your aunt! But... are you sure it's the turmeric which healed her? Does it work for everyone?

If we want to invest collectively in more effective treatments, it will take more solid proof than a few testimonials which we know very little about.

Ever since I've been wearing hazelnut necklaces, I'm feeling much better!



Possible. But that can also be explained by what you eat, by the exercise you do, your original condition, etc.

Yes, but it really works!

Does it work for the whole population?



Might there be negative effects?



You don't believe me?

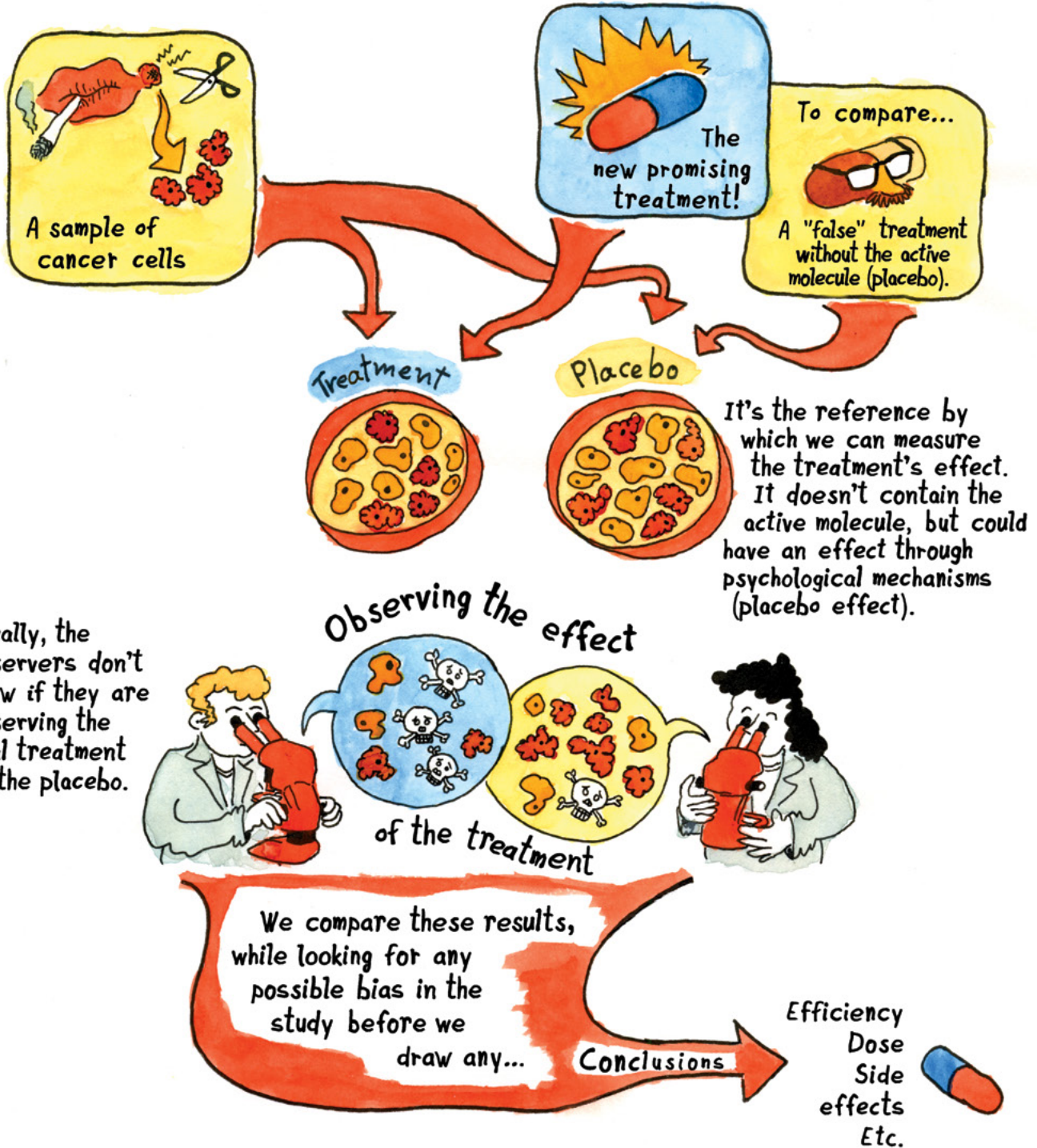
Believing is not enough. We want to be sure to give the best treatments to everyone.



In short, scientists don't want to believe it, they want to **see it!**
That's why they use the...

Scientific Method

In order to study a **new treatment** against oral cancer, we need:






With a lot of work and a bit of luck, the experiment will demonstrate the treatment's efficiency on the cells.

On cells only!

That doesn't tell us if it works on humans!



Scientists are very critical with anecdotal testimonials about the healing properties of turmeric or hazelnut necklaces, but they are also very critical of **each other!**

We call this **peer review.**

The sample is too small.


Several pertinent factors weren't taken into account.

The patients' ethnic origins weren't very diversified.

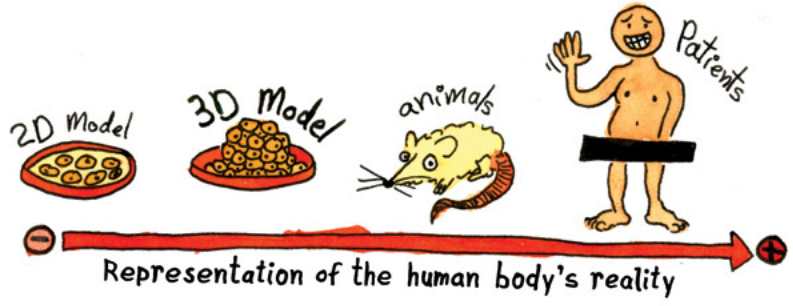


Verdict: this research can be published if the results are properly qualified.

For example: the treatment might work on **cells**. But it must be tested on a **3D** model before testing it on animals and humans.

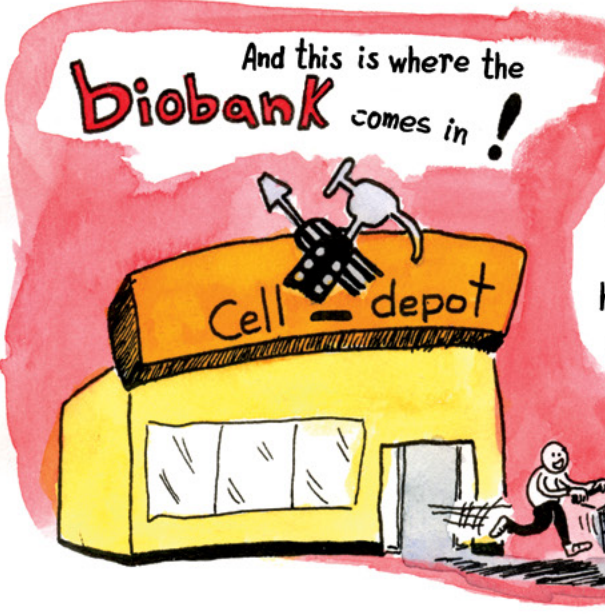


Instead of a simple layer of cells, a **3D model** is a sphere made up of different types of cells which is much closer to **reality**.



And this is where the **biobank** comes in!

Cell-depot



In order to build a 3D model, we need different types of cells: healthy and cancerous.



It also takes a variety of cells that make up their environment, like blood vessel cells.

Once everything is gathered together, the model can be built and experimented on.



Moreover, professor Semlali isn't only a banker.



He also builds 3D models to test new treatments.



And why not get back to **plant-based** medicine?



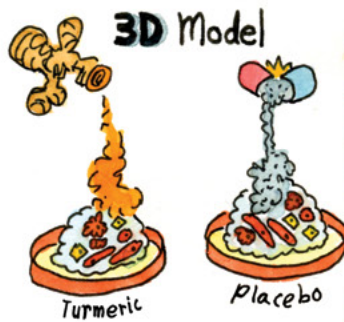
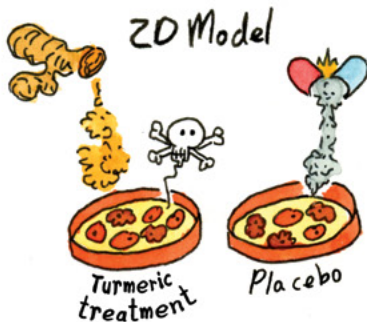
Abdelhabid Semlali decided to test anethole and curcumin analogues.



Yes, tumeric. Just like Aunt Ginette!



Except that Professor Semlali conducted proper experiments according to the scientific method.



RESULTS?

In short, these molecules coming from plants may help reduce chemotherapy doses...



In short, these molecules coming from plants may help reduce chemotherapy doses...

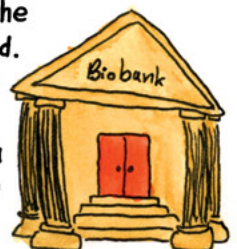
- ↳ without losing efficiency
- ↳ with fewer side effects

Yum!



With that said, we still need to wait on results of tests done on animals and on patients.

In the mean time, the RSBO Biobank continues to serve the common good. You have to admit, it's not what you expect from all banks!



MartinPM

ACKNOWLEDGEMENTS

The RSBO network thanks its partners



Martin PM

I would like to thank the RSBO network, particularly Christophe and Andrée, for having had the courage to begin this artistic endeavour. Thank you for the freedom to create. Thanks go to Daniel for having shared his ideas and his experience with me all during these months of creation. Thanks to the members of the RSBO network who welcomed me into their laboratories. Thanks to Laurène, Estelle, Jacinthe and Lucile for their comments, rereads, and suggestions. Thanks to Laurène for sharing their story. Thanks to Cécilia and Martin, who greatly helped us climb the last summit toward the publication of this collection.

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