SCIENCE AND FAITH II:

Reflections on gene editing

Álvaro Pérez

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Level 3 Catalyst Project of the Logos and Cosmos Initiative (ILC).
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Quotes are taken from the Holy Bible, New International Version, except where a different translation is indicated.

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“Every time we create, design, invent, etc., we are manifesting the image of God. And we are also imitating the Creator, albeit imperfectly.”

— FAZALE RANA

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INTRODUCTION

Genetic editing and the christian faith

If you've heard of gene editing in humans, you're probably wondering whether it's an amazing, life-transforming breakthrough or a danger that widens inequalities and leads us to "play God". In the context of disease treatment, the results are very appealing. However, this discovery also raises questions that we cannot ignore. For example: can our Christian faith walk hand in hand with this technology, are ethical dilemmas and biblical principles at odds or are they somehow intertwined? Does gene editing have the power to alter what makes us human? And at another angle, who will have access to these therapies; everyone, according to need, or only those who can afford them? These concerns have led me to explore how theology and bioethics illuminate the use of gene editing to cure/treat disease, and that is what I want to share with you.

In this series of inductive Bible studies, we will focus on gene editing as a tool to cure or treat disease. We will not focus on the use of gene editing for non-therapeutic enhancement or aesthetic purposes, but if you are willing to explore these topics during the Bible studies, they will certainly enrich our conversation. We don't promise to answer all your questions, but we do promise that it will be a valuable and stimulating dialogue.

How to use this module

"Science and Faith 2: Reflections on Genetic Editing" includes four Bible studies based on the inductive method. Each begins with an introduction, a key biblical passage and questions divided into observation, interpretation and application. To facilitate the answers, you will find a box with helpful information, followed by a final reflection. Some words marked with one to three asterisks (*) refer to notes that are mostly definitions that will help both the facilitator and the participants to better understand the topic. At the end, we offer recommended readings. These do not need to be read before each study; they are an optional resource for you or the facilitator to explore further the link between gene editing, theology and bioethics.

My hope in sharing these ideas is to create a space for respectful and intelligent dialogue which connects different perspectives on gene editing, bioethics and Christian faith. Also, my intention is to help university students and academics to better understand this science and its ethical implications from a Christian perspective. I hope this module will be a bridge between curiosity, reflection and action.

Best regards,

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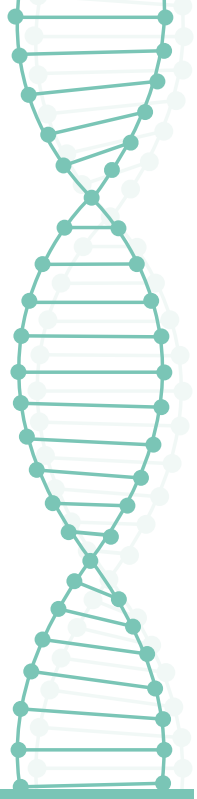
BIBLICAL STUDIE 1

The image of God and genetic editing

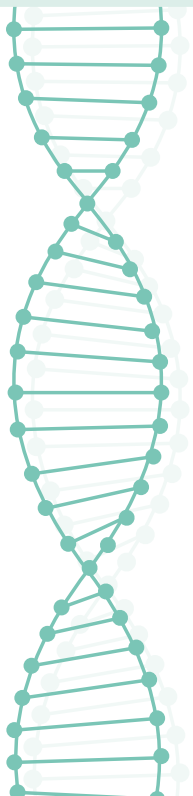
Gene editing is one of the most outstanding scientific advances of our time, and we have already described some of its applications in the previous study. But also, beyond its technological impact, it can become a powerful tool for service purposes. For those who live their faith as a call to help others, this technology offers a unique opportunity to alleviate suffering, improve quality of life and care for God's creation. Gene editing is not just a scientific act, but a way to put talents and knowledge at the service of those who need it most, reflecting love and compassion in action.

La Imagen de Dios: cuándo y cómo se refleja

One of the main passages where the foundations of human identity are based on, that is, considering man as the image of God, is Genesis chapter 1. Different approaches to this text have highlighted different aspects of the meaning of humanity and dimensions of its essence. Read through chapter 1 carefully and, through the following questions (or others that you may pose) focus specifically on Genesis 1:26-27. With the help of the accompanying commentaries, seek to discern the core elements of the essence of the meaning of being the image of God and how these elements might relate to the potential capabilities of gene editing to alter DNA.



> «This truth is clearly expressed in "Then God said, 'Let us make mankind in our image, in our likeness, so that they may rule over the fish in the sea and the birds in the sky, over the livestock and all the wild animals, and over all the creatures that move along the ground'. So God created mankind in his own image, in the image of God he created them; male and female he created them".»
>
> **— Genesis 1:26-27**



Observation

1. In the first verses of the passage, review the different phases of creation. Which are first and which are last? Do you distinguish any order in the process that God follows in creation? How do the different elements of reality appear?

2. What is man's place in the creation process?

3. According to the way God is creating reality, what distinguishes man from the rest of creation?

4. Can you describe the different aspects or attributes that God confers on man unlike the rest of creation?

Interpretation

1. Reflect on the uniqueness of the creation of man and woman and their role in creation What does it mean to be created in the image and likeness of God?

2. What divine characteristics do you think can be considered the "image" of God in man and woman?

Aplication

1. We know that the image of God in humanity was perverted by man's disobedience (Genesis 3). Despite this, can you see any attributes or characteristics of our society throughout history or today that may reflect the image of God? Can you point to any examples and/or circumstances in which they are observed?

2. What must happen to alter the image of God in human beings?

3. How is the image of God reflected in your daily life as a university student?

4. How can the cultural mandate expressed in Genesis 1:26-27 influence bioethics* decisions?

> **Note to facilitator:**
> In each question you can hint at an answer in the form of a question or, better still, a more specific sub-question that points to the answer. You can also add the verse(s) or phrase from the biblical text where the answers are found. After these hints, you could insert your comments below into the appropriate questions, or rewrite new comments.

The image of God, as presented in Scripture, does not refer to a physical characteristic that can be altered by medical or biotechnological** interventions. Rather, it refers to the human capacity to reflect divine attributes such as rationality, morality, spirituality and the capacity to relate to God. This image gives human beings a unique dignity and responsibility to rule and care for creation, acting as God's representatives on earth.

The 'image of God' is not a static or purely biological state, but a moral and relational calling: we are called to reflect God in our actions. Therefore, it cannot be destroyed or diminished simply by interventions in the human body, such as gene editing.

The image of God is reflected in us through the capacity to create, modify, design and manage. Being good stewards

does not mean being passive spectators of nature; it means making informed and wise decisions that promote the common good. Modifying nature, when necessary to alleviate suffering, is an act of active and responsible stewardship. By understanding how nature works and having the capacity to modify it for the well-being of others, we actively participate in the divine mandate to govern and care for creation.

Far from undermining the image of God, gene editing can be seen as a means by which human beings actively participate in the care of creation and the well-being of others. As a reflection of God's justice and love, we are called to use our scientific capacities to heal, restore and promote life. Thus, science, when oriented towards service and justice, becomes a way of collaborating with God in his redemptive work in the world.

***Note:**

Bioethics is a discipline that studies ethical issues related to life and health. It focuses on issues such as medical care, biomedical research and the relationship of human beings to life in general. Bioethics seeks to integrate ethical and scientific principles to address dilemmas and propose solutions that respect the dignity and rights of all living beings.

****Note:**

Biotechnology is a science that uses living organisms and their components to develop life-enhancing products and technologies in agriculture, industry and medicine. In medical biotechnology, biological knowledge is applied to diagnose, treat and prevent disease, including the development of biological medicines, genetic engineering to correct inherited diseases, and advanced technologies such as gene therapy and gene editing.

BIBLICAL STUDIE 2

Therapeutic genetic editing: justice and biblical stewardship

Human gene editing, with its potential to treat or cure diseases such as those mentioned in the previous study, also presents a paradox that needs to be addressed: while science advances, inequalities in access to these technologies persist. This is where the biblical principles of justice and stewardship emerge as indispensable ethical foundations to guide their development and application.

The Bible teaches us that God is the absolute owner of creation (Psalm 24:1), and human beings are its stewards: that is, we are called to manage resources wisely, including scientific knowledge. This concept of stewardship implies a dual responsibility: to innovate to alleviate suffering and, at the same time, to ensure that the benefits reach all humanity, not just those who can afford them. In Latin America, where millions of people suffer from genetic diseases, cancer and other serious pathologies, the dramatic contradiction between therapeutic advances and the lack of access to innovative treatments is particularly assumed. Biblical justice (Proverbs 21:21) demands bridging this gap, challenging governments, companies and institutions to prioritize the public good over profit. Far from being a threat, gene editing can be a reflection of God's justice and love when used to alleviate suffering and reduce inequalities.

Justice and stewardship in the scriptures:

"He has shown you, O mortal, what is good. And what does the LORD require of you? To act justly and to love mercy and to walk humbly with your God."

—Micah 6:8

"Our desire is not that others might be relieved while you are hard pressed, but that there might be equality. At the present time your plenty will supply what they need, so that in turn their plenty will supply what you need. The goal is equality, as it is written: "The one who gathered much did not have too much, and the one who gathered little did not have too little."

—2 Corinthians 8:13-15

"Now it is required that those who have been given a trust must prove faithful."

—1 Corinthians 4:2

Observation

1. What are the keywords or ideas that stand out in the text? How do they help us understand what God considers important or valuable?

2. What do you observe in the text of 2 Corinthians about the nature of the suffering of others and how God addresses or uses it according to this passage?

Interpretation

1. A What does it mean to "do justice" according to Micah 6:8? How does it differ or resemble the ideas of justice we find in our society today?

2. If stewardship involves managing God's resources (such as science), what responsibility do we have for inequalities in access to gene therapies. To cite one example, a gene therapy to treat sickle cell anaemia*.

3. According to Scripture, should we oppose scientific advances, such as gene editing, when they could widen inequality gaps, or rather strive to bring their benefits to all people?

Aplication

1. How can we, as students, professionals or believers, practice justice and humility when using or promoting technologies such as gene editing?

2. In a world where the lines between the therapeutic (healing) and the aesthetic** are blurred, what criteria help us decide which uses are faithful to God's command?

3. What concrete steps could you take in your daily life or in your community to advocate for more equitable access to medical advances?

Note to facilitator:
In each question you can hint at an answer in the form of a question or, better still, a more specific sub-question that points to the answer. You can also add the verse(s) or phrase from the biblical text where the answers are found. After these hints, you could insert your comments below into the appropriate questions, or rewrite new comments.

***Note:**
Sickle cell **anaemia** is an inherited disease that changes the shape of red blood cells. Instead of being round and flexible, they become sickle-shaped (a curved tool), causing them to get stuck in blood vessels and not carrying enough oxygen. On 8 December 2023, the United States approved a new treatment that uses CRISPR editing to cure this disease.

****Note:**
Some authors mention that we can "speak" of non-therapeutic enhancements as those whose purpose goes beyond restoring something that has been lost or never there, but is generally and typically seen in members of the human species.

BIBLICAL STUDIE 3

Genetic editing as an expression of faith and service

Human beings have always felt the need to explore and transform the world around them. On this path, science and faith have not been rivals, but companions which both help us understand reality and use it to serve others. Gene editing, a breakthrough that can cure diseases such as sickle-cell anaemia or cancer, is not just a technical achievement; it is an opportunity to live our Christian faith in an active way. It invites us to be good stewards of what God has given us, using knowledge to alleviate suffering and promote justice, dignity and well-being for all. For me, who from my years as a student of biotechnology saw in this science a doorway to help others, gene editing is not a challenge to God's sovereignty, but a gift he entrusts to us to reflect his love and compassion in action.

> "If anyone, then, knows the good they ought to do and doesn't do it, it is sin for them."
>
> **—James 4:17 (RVR 1960)**

Observation

1. What is James criticizing in the previous verses? What attitude or behavior is he correcting?

2. What does "knowing how to do good" mean in this text? What kind of "good" do you think it refers to?

3. Why does James say that failure to act is "sin"? What does this tell us about the responsibility of those with knowledge or resources?

Interpretation

1. If we know that gene editing can heal diseases, what does "good" imply according to this verse?

2. How does this text relate to the idea that science is a gift from God that we should use to serve others?

3. What could be considered "sin" in the context of not using or misusing scientific advances that could help others?

Aplication

1. As a student or believer, how can you use your knowledge or skills to do good in your environment, inspired by gene editing as an example?

2. What responsibility do we have to ensure that technologies such as CAR-T or Casgevy therapies do not remain in the hands of the few, but reach the most vulnerable?

In your day-to-day life, how can you avoid the "sin" of not acting when you know what is good and right?

Note to facilitator:
In each question you can hint at an answer in the form of a question or, better still, a more specific sub-question that points to the answer. You can also add the verse(s) or phrase from the biblical text where the answers are found. After these hints, you could insert your comments below into the appropriate questions, or rewrite new comments.

James 4:17 confronts us with a clear truth: with knowledge comes responsibility. Gene editing, with examples such as CAR-T* therapies, shows us how science can be an ally of compassion. But knowledge is not enough; we must act. Christian faith calls us to use these gifts with integrity and humility, not to usurp God's place, but to reflect his love and sovereignty.

Far from being a threat, gene editing can be an expression of service and hope when guided by justice and love of neighbor (Matthew 22:39). As Massmann and Fox say, "human decisions should be measured by their usefulness to others" (Massmann & Fox, 2023). Thus, this science becomes an act of worship: we use our hands and hearts to tell the story of a God who called us to care for his creation and for one another.

***Note:**
CAR-T (chimeric antigen receptor) cell therapies are a type of immunotherapy that uses T cells from the patient's immune system to fight diseases such as cancer, but also other diseases.
In simple terms, the process involves extracting T cells from the patient's blood, genetically modifying them in a laboratory so that they have a special receptor (CAR), which acts like a lock that only recognizes a specific key, such as a diseased cell. These modified cells are multiplied in a laboratory and returned to the body, where they function as a personalized army that attacks and eliminates the problematic cells.

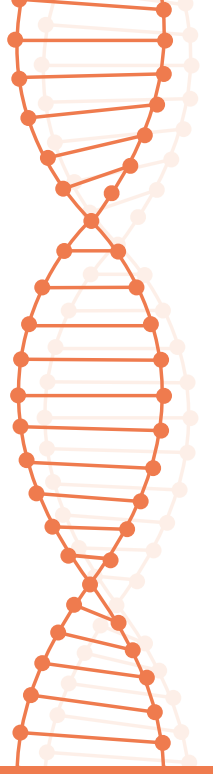
BIBLICAL STUDIE 4

Bioethics and faith

When discussing bioethics, many believe that there is no need to refer to God or any religious denomination. For example, Paulina Rivero (2021) argues that bioethics should be secular, a space for "rational dialogue," leaving aside personal beliefs and focusing on universal principles such as autonomy, beneficence, and justice. These principles are reflected in key documents such as the Belmont Report* and the Helsinki Declaration**, which emphasize the protection of life and human dignity. The Latin American Dictionary of Bioethics also highlights that bioethics should not be limited to abstract principles, but should address questions about the origin, development, and end of life; it emphasizes that bioethics must be committed to the most vulnerable populations and their access to health systems and medicines.

However, when examining the biblical narrative, we find echoes of these same values, not as mere statements, but as divine mandates. Loving one's neighbor (Leviticus 19:18) and seeking justice (Proverbs 21:3, Micah 6:8, Amos 5:24) resonate with beneficence and equity, suggesting a common ground between secular ethics and christian principles.

What, then, of an issue as complex as genetic editing? Its experimental power raises questions about safety, efficacy, and equitable access. As we have mentioned, these technologies offer an



"To do what is right and just is more acceptable to the Lord than sacrifice."

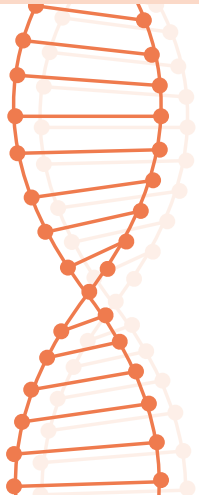
— Proverbs 21:3

"He has shown you, O mortal, what is good. And what does the Lord require of you? To act justly and to love mercy and to walk humbly with your God."

— Micah 6:8

"But let justice roll on like a river, righteousness like a never-failing stream!"

— Amós 5:24



opportunity to alleviate human suffering, but they also constitute a scenario where our faith can manifest itself as living and practical. Christian faith, with its concern for inequality and human dignity, can shed light on this ethical debate. For example, an error in gene editing could cause unpredictable harm, while its use to "enhance" humans raises fears of eugenics or loss of diversity.

Bioethics from secular, theistic, and Christian faith perspectives can converge perfectly to guide these innovations with wisdom and love. The Christian tradition, with its emphasis on the dignity of each person as the image of God and on the call for justice, offers a moral framework that enriches bioethical principles. In turn, bioethics provides rational tools for addressing the practical implications of science. Together, faith and bioethics can foster responsible science that not only advances knowledge but also protects the vulnerable, promotes equity, and respects God's creation, demonstrating that faith not only coexists with reason but perfects it in the pursuit of the common good.

Observation

1. How would you describe what it means to "do justice" or "love mercy" according to Micah 6:8?

2. In Amos 5:24, justice is compared to a river. What does this image suggest to you about what justice should look like in the way we treat others?

Interpretation

1. According to Proverbs 21:3, Micah 6:8, and Amos 5:24, what does the text reveal about the importance God places on justice and righteousness in human actions?

2. What does Proverbs 21:3 teach about the relationship between religious sacrifices and righteous actions, and how does this connect with the message of Micah 6:8?

Aplication

1. If bioethics seeks dignity and rights, what role does your faith play in advocating for genetic editing that leaves no one behind?

2. In your work or studies, how could you foster a rational and loving dialogue between science and faith on these issues?

***Note:**
Belmont Report: Establishes ethical principles for research involving human subjects, such as respect for persons, beneficence, and justice.

****Note:**
Declaration of Helsinki: An ethical guide for medical research, emphasizing the protection of participants.

REFERENCES

Recommended reading

Biblical studie 1

The image of God and gene editing

- Chapman AR. Genetic engineering and theology. Theology Today. 2002 Apr;59(1):71–89.
- Massmann, A., & Fox, K. R. (2021). Modifying Our Genes: Theology, Science and" Playing God". SCM Press.

Biblical studie 2

Therapeutic gene editing: Justice and biblical stewardship

- Cole-Turner, R. (2012). Biotechnology and Justice.The Routledge Companion to Religion and Science (pp. 439-448). Routledge.
- FDA. (2023, December 8). FDA Approves First Gene Therapies to Treat Patients with Sickle Cell Disease.
- Deckers, J., Lucena, A. D., Douglas, T., Díaz, P. G., Kahane, G., Astobiza, A. M., ... & Véliz, C. (2021). Más (que) humanos: Biotecnología, inteligencia artificial y ética de la mejora. Comercial Grupo ANAYA, SA.

Biblical studie 3

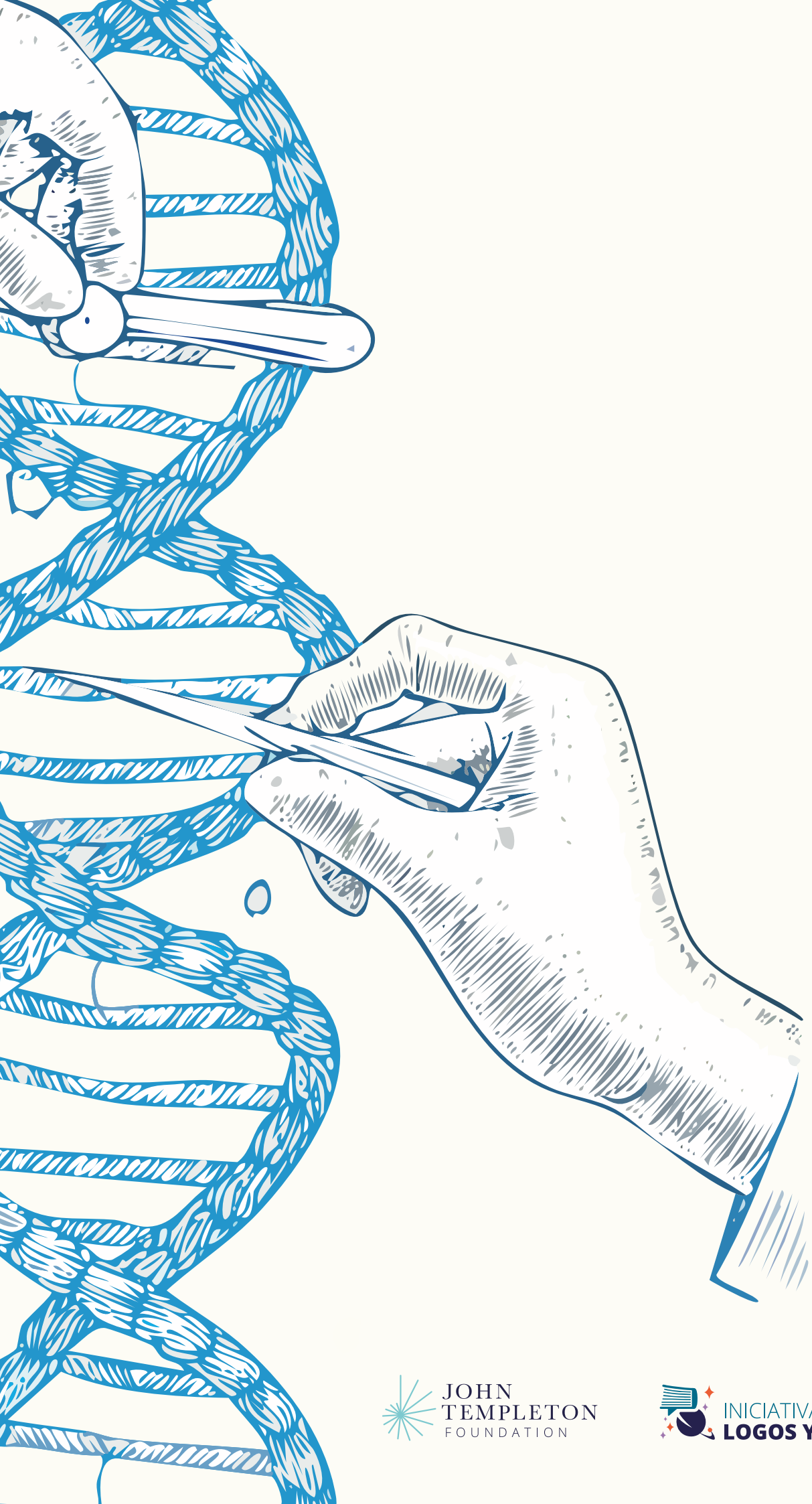
Gene editing as an expression of the faith and service

- Lausanne Occasional Paper 58 (2004). Bioethics: Obstacle or Opportunity for the Gospel?
- Rana, F. (2012).A Theology for Synthetic Biology, Part 1 (of 2) - Reasons to Believe
- CAR T Cells: Engineering Immune Cells to Treat Cancer - NCI. (2025).
- Tao, R., Han, X., Bai, X., Yu, J., Ma, Y., Chen, W., Zhang, D., & Li, Z. (2024). Revolutionizing cancer treatment: enhancing CAR-T cell therapy with CRISPR/Cas9 gene editing technology. Frontiers in Immunology, 15, 1354825.

Biblical studie 4

Bioethics and faith

- Ashcroft, R. E. (2008). The declaration of Helsinki. The Oxford textbook of clinical research ethics, 21, 141-148.
- Faiad, S. L. (2022). La ética en los ensayos clínicos: de Tuskegee al Informe Belmont. Oncología clínica, 27(2).
- Bustamante, B. J. P. (2018). Bioética, biomedicina y economías de la vida: Hacia una ética de la corresponsabilidad. Universidad El Bosque (Colombia).
- Tealdi, J. C. (Ed.). (2008). Diccionario latinoamericano de bioética. UNESCO; Universidad Nacional de Colombia.



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