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The Need for a Consistent Regulatory Framework for CRISPR Gene-Editing in the European Union

Authors : Andrew Thayer, Courtney Rondeau, Paraskevi Papadopoulou

Abstract : The Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) gene-editing technologies have generated considerable discussion about the applications and ethics of their use. However, no consistent guidelines for using CRISPR technologies have been developed -nor common legislation passed related to gene editing, especially as it is connected to genetically modified organisms (GMOs) in the European Union. The recent announcement that the first babies with CRISPR-edited genes were born, along with new studies exploring CRISPR's applications in treating thalassemia, sickle-cell anemia, cancer, and certain forms of blindness, have demonstrated that the technology is developing faster than the policies needed to control it. Therefore, it can be seen that a reasonable and coherent regulatory framework for the use of CRISPR in human somatic and germline cells is necessary to ensure the ethical use of the technology in future years. The European Union serves as a unique region of interconnected countries without a standard set of regulations or legislation for CRISPR gene-editing. We posit that the EU would serve as a suitable model in comparing the legislations of its affiliated countries in order to understand the practicality and effectiveness of adopting majority-approved practices. Additionally, we present a proposed set of guidelines which could serve as a basis in developing a consistent regulatory framework for the EU countries to implement but also act as a good example for other countries to adhere to. Finally, an additional, multidimensional framework of smart solutions is proposed with which all stakeholders are engaged to become better-informed citizens.

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