Introduction of bioethics into molecular life science education: a timely requirement or just a personal opinion?

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Gaining new insights is a major driving force for research activity in molecular life science. Although, recent advances made by the arrival of new techniques such as CRISPR/Cas9 give rise to hopes for curing genetic diseases, its possible implementation in germline editing of plants, insects, mammals and man raise fundamental ethical questions. At the same time frame a balanced public response such as the establishment of suitable funding criteria, distribution of knowledge about novel therapies, evaluation of environmental risks and changes in legislation is difficult to achieve. In order to bridge the communication gap between scientists working in the laboratory and the acceptance of a new technique in the public who is critical about anticipated adverse outcomes, we suggest to enhance the awareness of scientists themselves for ethical topics.

As students in life sciences are starting to participate in the establishment of techniques and their applications mentioned above, they should be educated as early as possible to evaluate the consequences of their experiments not only for their own career but also for human welfare.

Here we present in more detail how we work on selected topics in “Bioethics” in a credited course within the Bachelor program of biochemistry at the Ruhr-University of Bochum. The course is performed in collaboration with the department of applied ethics, faculty of philosophy and educational research. Specific ethical topics are presented in plenary lectures by supervisors followed by presentations from a group of 3 students each defending pro- and contra-aspects and ending with a general discussion.

Taking together, recent developments in molecular biology imply the possibility of germline modification calling for a global debate also from within the scientific community. In collaboration between professionals in applied ethics and biochemists the implementation of ethical topics in molecular life science education is encouraged.