

Current JRC activities in the field of biomedical research, with a focus on indicators to monitor impact and innovation of funded biomedical research

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Animal models have been traditionally used in biomedical research to recapitulate human disease features and develop new drugs, as they are generally purported to resemble some of the major hallmarks of human diseases^{1,2}. However, these animals do not develop the disease as it occurs in humans, and their use has not paved the way to the development of drugs effective in human patients^{1,2,3}. Indeed, despite conspicuous research and economical endeavours, the clinical failure rate in drug development still remains very high, with an overall likelihood of approval from Phase I of about 9.6%. On the other hand, the expanding toolbox of non-animal methods, accounting for e.g., induced pluripotent stem cells derived from patients, next-generation sequencing, omics and integrated computer modelling can be used to study human diseases in human based settings, identify new potential druggable targets, and evaluate treatment effects^{4,5}. The rise of new technological tools and models in life science, and the increasing need for multidisciplinary approaches, have encouraged many research initiatives and the launch of new EU calls for proposals. Research proposals based on the use of both animal and/or non-animal approaches have been extensively funded at European level. Nowadays, it is becoming pivotal to define and apply indicators suitable to measure social impact of research funding strategies, monitor contribution to innovation, retrospectively assess public health trends, and readdress funding strategies when needed⁵. Here we discuss such issues, describing a list of indicators to measure impact and innovation of biomedical research.

References

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