

The importance of collaboration between academia and industry in pharmaceutical R&D

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Introduction

Today, there is a strong focus on supporting health innovation at both national and international level. The development of new and innovative formulations is also part of the strategic plans of several academic sectors. However, this cannot be achieved effectively unless universities work closely with industry, thus strengthening the third mission of universities. In this way, international competitiveness can be significantly enhanced.

Materials and methods

The methodology used is competence-based and focuses on the training of young researchers. Multidisciplinary research networks have been set up to implement the research direction agreed with industrial partners. We applied a comprehensive research and development competencies methodology that develops a model system for financial feasibility analysis that is aligned with self-sustaining research.

Results and discussion

As a result of the new approach of the multidisciplinary research network and the cooperation between industry, the University of Debrecen has developed product and service-oriented research directions, which also focus on financial and social utility.

The network has learnt at the service level about quality-assured RDI activities ranging from laboratory-scale formulation development to university-sponsored

human pilot studies. For implementation, we have set up a medium-scale manufacturing facility. As an achievement, we have also paid special attention to ensuring the next generation of young researchers. We have taught competence in an interdisciplinary approach to research. We have strengthened national and international networking competences by giving them the opportunity to develop their own network of contacts. We made sure that they recognised the benefits of active participation in research teams. We have reinforced the practice of examining research results in terms of patentability. The research network involved 11 research teams working together at different levels. We focused on in vitro and in vivo results and how they relate to each other, and the artificial intelligence team developed algorithms that the research results can be analyzed more efficiently.

Conclusion

As a result of the establishment of an efficient multidisciplinary research network, a spin-off company was founded together with industrial partners, and many new technologies and prototypes were developed. In order to increase the TRL level, we have prepared effective plans. As a result of successful cooperation between academia and industry, R&D activity in the health industry reached a new level, further strengthening the development and implementation of a new multidisciplinary research approach.

