

THE REAGENT FOR PROTECTION OF MICROORGANISMS IN FREEZE-DRYING PROCESSES

Authors

Dr hab. Robert Czajkowski
Dorota Krzyżanowska, PhD
Tomasz Maciąg
Joanna Siwińska, PhD
Dr hab. Sylwia Jafra

Intercollegiate Faculty of Biotechnology
University of Gdańsk
and
Medical University of Gdańsk

Commercialization opportunities



- ➔ Licensing agreement
- ➔ Transfer of ownership
- ➔ Partnership in order to further research or commercialization

IP Status



The invention was submitted for patenting according to Polish (P.428215) procedures.

Implementation progress



TRL 4
Technology validated
under laboratory conditions

Freeze-drying is one of the most popular methods of low-temperature drying, which consists in evaporation of solvent from frozen substances as a result of sublimation. This process is widely used in the food, cosmetics and pharmaceutical industries, as well as in the conservation of biological materials. The method is as well often used for the preservation of bacteria in order to maintain their longevity.

Due to the low temperature used during freezing of the preparations and at the stage of freeze-drying itself, this process leads to a decrease in the activity and viability of bacteria. In order to prevent this from occurring, it is common to add some protective substances - cryoprotectants, to the preparations before the freeze-drying process. One of these substances is Reagent 18 - recommended by the American Type Culture Collection (ATCC) and containing Bovine Serum Albumine (BSA). The disadvantage of the proposed solution, despite its effectiveness, is the high cost of the Reagent 18 caused by the use of expensive BSA.

Scientists from the University of Gdansk have developed a new freeze-drying reagent, which uses a much cheaper substance of plant origin as a substitute for expensive bovine serum albumin. This modification not only significantly reduces the cost of the preparation, but also makes it more humane due to the fact that the reagent has been deprived of zoonotic components. What is particularly important: the effectiveness of the developed reagent remains at the same level as when using a reagent containing BSA, and in some cases even exceeds it.

Technology Transfer Office



biuro@ctt.ug.edu.pl



58 523 33 74
58 523 33 75



ul. Jana Bażyńskiego 1a
80-309 Gdańsk