# Behin Pharmed

was established with the mission of advancing modern technologies in diagnostics and therapeutics. In the field of treatment, the company is focused on developing innovative methods such as:

1- Liposomal products (API, Finished, Pipeline)
2- Nutraceuticals
3- Cosmeceuticals

Liposomal Products:

**microfluidic technology** for the production of **liposomes** and **lipid nanoparticles**, aimed at enhancing the **bioavailability** of natural compounds and improving drug delivery systems.

**About Liposomal Technology**

By encapsulating active pharmaceutical ingredients in **liposomes**, their absorption and bioavailability in the body significantly increase, leading to **maximized therapeutic effectiveness**. Liposomal formulations offer several key advantages:

- **Enhanced Bioavailability**: Faster and more efficient absorption
- **Greater Stability**: Protection against oxidation and degradation
- **Targeted Delivery**: Precise transport of active ingredients to specific cells and tissues

Through the development of this technology, **Behin Pharmed** is able to create innovative and effective health supplements and drugs, positioning itself as a credible leader in the field of **natural and pharmaceutical-grade raw materials**, offering a wide range of **high-quality liposomal products**.

Available Liposomal API

- **Liposomal Neuroprotective API**
  **Liposomal Metabolism Boosters API**
  **Liposomal Antioxidants API**
  **Liposomal Anti-Aging API**
  **Essential Liposomal Vitamins**
  (Vitamins C, B6, B12, D3, K2)
- **Essential Liposomal Minerals**
  (Zinc, Mg, Ca , Se,)
- **Quercetin Phytosome**
- **Liposomal L-Arginine**

Finished Liposomal products

**SleepX Brand**

- **SleepX Quiet spray**
- Throat Spray
- Anti-snoring Spray


- **SleepX Dearm Spray**
- Oral Spray
- Melatonin+ Vitamin B6 Spray

**GeniCare Brand**

**GeniCare BV Vaginal Gel**

Relief from Bacterial Vaginosis (BV) and Yeast Infections

**GeniCare HPV Vaginal Gel**

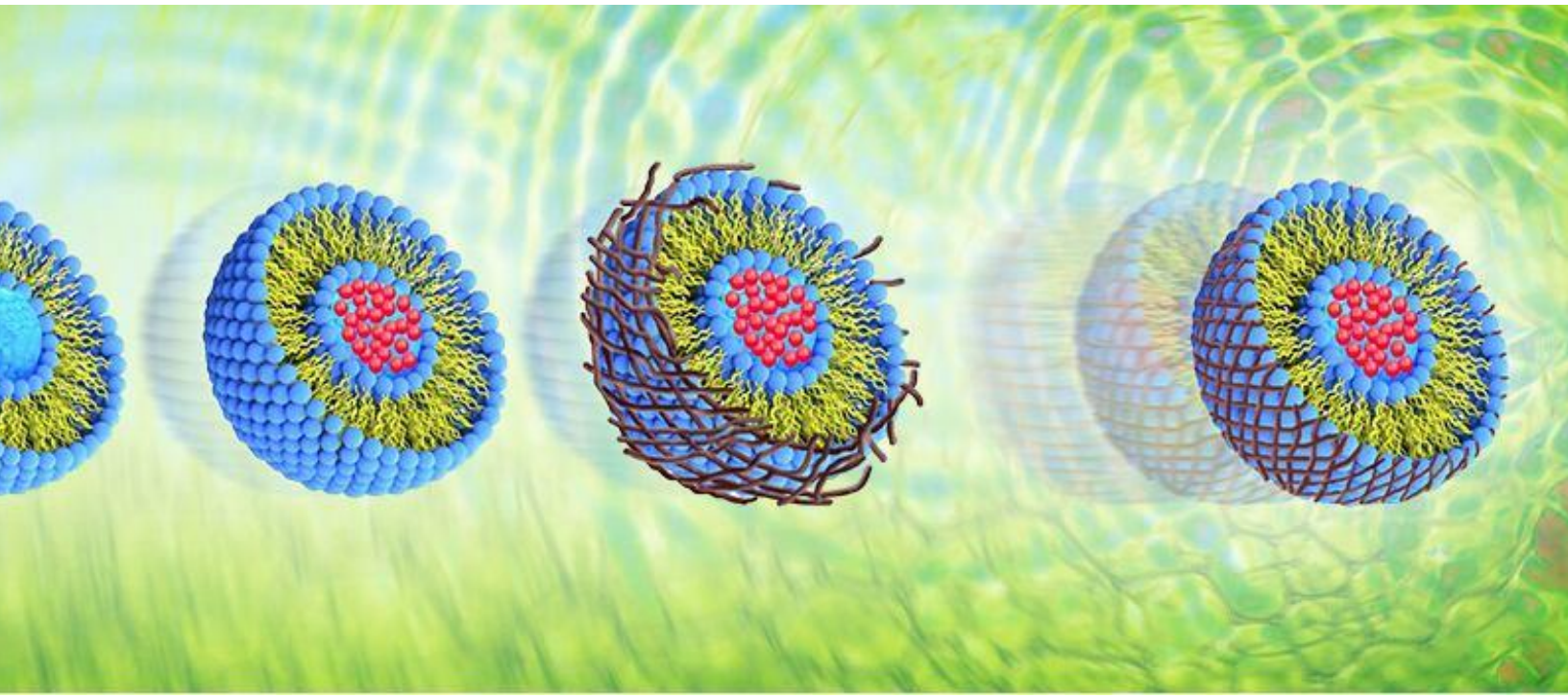
Clinically Proven Support for HPV-Related Lesions

**GeniCare Fertility Lubricant**

Clinically Recommended for Enhanced Conception

Pipeline liposomal API

- **Liposomal Antiviral Active Ingredient**
  **Liposomal Ingredient for Skin and Hair Cell Stimulation**



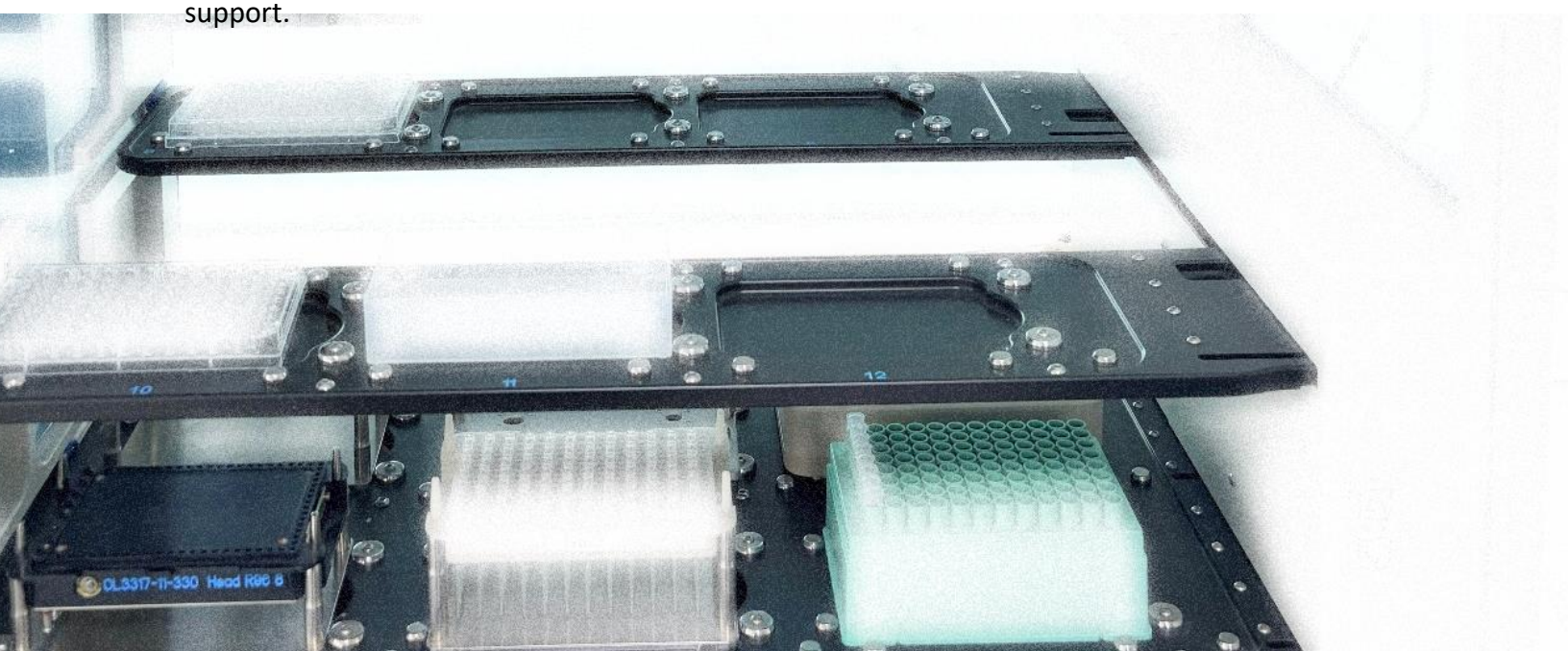
# Protein Engineering and Molecular Biology services

We used metabolic engineering, molecular biology techniques and fermentation feeding strategies to design new yeast host strains. This is a platform of the methylotrophic yeast strain *Komagataella phaffii* (syn. *Pichia pastoris*) and vectors for recombinant protein expression which is generated to facilitate production of proteins in industrial scale. This platform also includes the synthetic parts for tunable gene expression in yeasts to generate new yeast strains. We own all the IP rights and secret know-how for our platform technology. We are skilled at solving problems and managing projects. We ensure 100% freedom-to-operate for all our clients and licensees and provide a smooth and high standard project progress.

Competitive Advantages of our Strains

- High-level protein production (0.5 – 20 g/L)
- Stable co-integration of multiple expression cassettes
- Short and cost-efficient fermentation without complex additives
- Stable and non-allergenic protein production
- Co-expression of different genes in one strain
- Expression vectors w/o resistance marker
- Low levels of host protein impurities upon secretion

Also, our *E. coli* expression platform is suitable for a wide range of recombinant proteins, including enzymes, antibodies, hormones, vaccines, and biosimilars. We have successfully expressed and purified different proteins using our platform, with high quality and purity standards. We can also provide customized solutions for your specific needs, such as protein engineering, post-translational modifications, functional assays, stability tests, and regulatory support.



Using our secure and highly efficient expression platforms, we provide a variety of protein/pepties useable in diagnostics, vaccine and drug discovery research and, also enzyme-producing cell lines and methods available for licensing and technology transfer:

| **PROTEIN/PEPTIES** | **TYPE** | **EXP. HOST** |
|---|---|---|
| Insulin | Human, Aspart, Glargine, Lispro | *E. coli* |
| CRM197 | non-toxic mutant of diphtheria toxin | *E. coli* |
| SARS-CoV-2 receptor binding domain (RBD) | Wuhan, Beta, Delta | *E. coli* |
| Vascular endothelial growth factor (VEGF) | Human (recombinant) | *Pichia pastoris* |

| **ENZYMES** | **EC NUMBER** | **ORIGIN ORGANISM** | **EXP. HOST** |
|---|---|---|---|
| Acetylcholinesterase | 3.1.1.7 | *Drosophila melanogaster* | *Pichia pastoris* |
| Invertase | 3.2.1.26 | *Saccharomyces cerevisiae* | *Pichia pastoris* |
| Beta-glucosidase | 3.2.1.21 | *Trichoderma reesei* | *Pichia pastoris* |
| Alkaline endoglucanase | 3.2.1.4 | *Humicola insolens* | *Pichia pastoris* |
| Glucose oxidase | 1.1.3.4 | *Aspergillus niger* | *Pichia pastoris* |
| Lipase | 3.1.1.3 | *Thermomyces lanuginosus* | *Pichia pastoris* |