Hungarian and Israeli biotech companies teamed up to tackle Crohn’s, an intractable inflammatory bowel disease that affects five million people worldwide. Its causes are uncertain. There is no foolproof cure and poor public understanding of the pain and chronic suffering it causes. But things are looking up thanks to the work of the Eureka PIP-4-CD team.

Crohn’s disease is an inflammatory bowel disease (IBD). When active or flaring up, the inflammation can cause abdominal pain, severe diarrhoea, fatigue, weight loss, malnutrition and in some cases death. While there is no known cure for Crohn’s, therapies can greatly reduce its signs and symptoms and even bring about long-term remission.

Treatment options are limited to controlling the symptoms with medication, combined with lifestyle and dietary changes. Frontline drugs used include mesalazine, corticosteroids and immunomodulators. Anti-tumour necrosis factor agents have recently been added to the regime for many patients developing serious infections, lymphoma, melanoma, sarcoma and other malignancies. So, the Eureka-backed PIP-4-CD project set out to develop more targeted solutions.

“Eureka support was the catalyst for bringing together PIP-4-CD’s three “unlikely yet really complementary” teams from Hungary and Israel.”

“Straight to the destination ... no spillage

“To give patients a better chance and reduce risks associated with medications like this, we had to find ways not only of boosting their potency but also of getting them precisely where they need to be in the bowel and intestines with no harmful ‘spillage’ along the way,” explains Dr Letoha. The idea was to ‘imprint’ the active agents (protein-imprinted polymers) to bind specifically to TNFa and knock it out before it can cause further harm.

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During the project, Pharmacoidea developed several bioassays and preclinical protocols for testing the anti-inflammatory potential of drug candidates, along with consumer-friendly products, such as patent-protected specialty nutraceuticals (drug-free inflammation treatments). These bioassays and nutraceuticals are currently being sold on the respective national markets. Turnover is expected to double in the coming years.

The project also broadened the science behind protein-imprinted polymers, leading to a new publication co-authored by researchers from the consortium.

Plans are now under way to further develop the products and launch them on international markets. For this, the team is confident that the PIP-4-CD partnership will provide enduring benefits down the line.