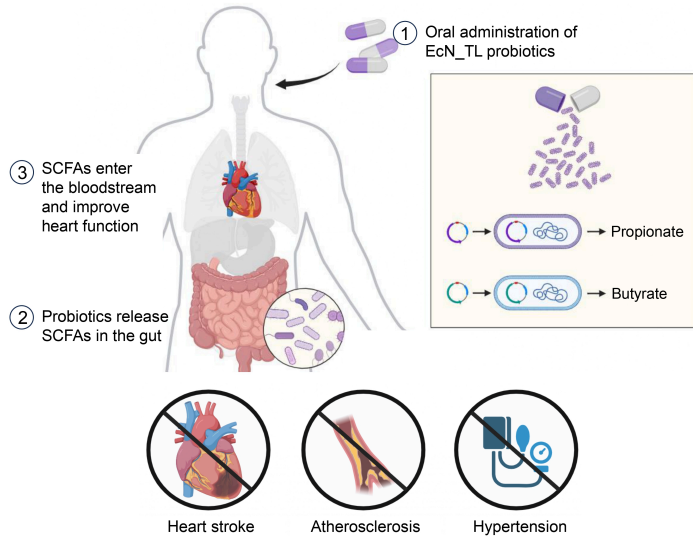


# EcN\_TL: Engineered E. coli Probiotic Formula for Oral Administration



Health & Wellness

Biomedical and Genetic Engineering



IP Status

Patent filed



Technology Readiness Level (TRL) ?

5

Inventor(s)

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## Opportunity

Coronary artery disease (CAD) is a prevalent and potentially devastating condition that not only compromises one's quality of life but also poses a significant financial burden. This chronic ailment gradually develops over time and can be attributed to various factors, including diabetes, obesity, stress, an unhealthy high-fat diet, or a sedentary lifestyle. As we enter middle age, our susceptibility to CAD increases, further exacerbated by the demands and pressures of our busy and stressful modern lives.

We have developed probiotic strains that produce beneficial substances specifically aimed at promoting heart health. The exciting part is that with our solution, individuals do not have to make drastic lifestyle or dietary changes. Our probiotics work harmoniously with the natural composition of the human gut, making this approach remarkably safe and well-tolerated. By incorporating our probiotic strains into their daily routine, people can take proactive steps to support their cardiovascular well-being without the need for drastic lifestyle modifications.

## Technology

Through the application of advanced biotechnological techniques, we have successfully introduced biosynthesis pathways into the probiotics E. coli Nissle 1917 (Mutaflor), resulting in the generation of two distinct strains: TLP and TLB. These strains have been engineered to produce propionate and butyrate, which are essential short-chain fatty acids. The innovative solution we present is a unique combination of these two probiotic strains, TLP and



TLB, in equal proportions, which we have named the EcN\_TL formula. This extraordinary formula harnesses the power of probiotics to generate significant amounts of propionate and butyrate.

When consumed orally, the EcN\_TL formula effectively raises the levels of short-chain fatty acids (SCFAs) in the bloodstream, offering promising potential in improving the condition commonly known as a heart attack or myocardial infarction.

## Advantages

- Promotes heart health: The probiotic strains in the EcN\_TL formula are specifically designed to support cardiovascular well-being
- Safe and well-tolerated
- No drastic lifestyle changes required
- Convenient and easy to incorporate

## Applications

- Prevent heart diseases: heart stroke, high blood pressure, and atherosclerosis
- Reduce damage and faster recovery after heart stroke
- Potential in other SCFA-related metabolic diseases: type 2 diabetes, obesity, chronic kidney disease, thyroid disease, and inflammatory bowel disease

