

With a growing need for precise medication and treatment administration, the advancement of drug delivery technology has become very important. Recent studies have shown that bioengineered yeast is an efficient method to deliver drugs to the body. However, the shelf life of the yeast isn't long enough to help with treatment for a long period. Herein, we developed an orally ingestible device with ultra-long drug-releasing capabilities. The device consists of a capsule with a biocompatible polymer that hosts yeast that produces therapeutic proteins. The biocompatible polymer will be able to form a "floatie" shape once released from the capsule to allow for the longevity of the yeast. The capsule will adhere to the gastric walls through a biocompatible adhesive. Drug releasing will occur passively through the dissolving of the capsule in the stomach and allow for the yeast to produce therapeutic proteins to help with the treatment of chronic diseases such as PKU.