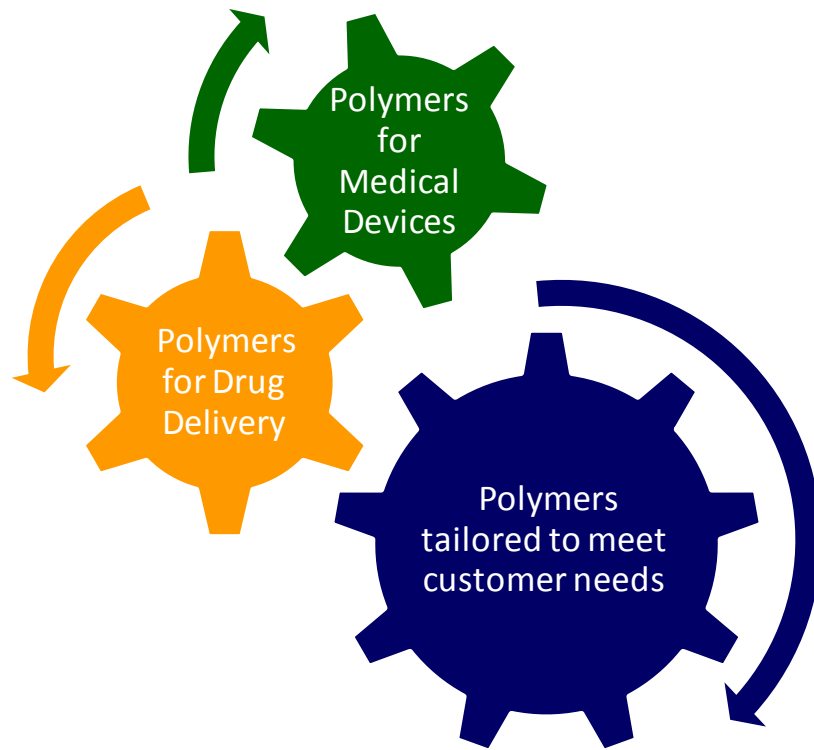




Absorbable Polymers



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Message from President & CEO



Think Absorbable. Think Bezwada Biomedical

At Bezwada Biomedical, we understand the challenges and risks involved in bringing highly differentiated and technically advanced bioabsorbable product to the market. By combining our years of experience and unequalled expertise in developing absorbable polymers, we evaluate the individual needs of our customers and develop smart, value added solutions ideally matched to their end-use requirements.

We invite you to look upon us and our catalog as a resource for not only absorbable monomers, macromers and polymers but also information and ideas. With our exciting patent pending absorbable technology platforms, we would like to help our customers to get ahead of the competition.

What distinguishes us from our competitors is that in addition to R&D facilities in USA, we have state-of-the-art custom synthesis, upscaling, analytical, contract research and manufacturing facility located in India. This enables us to develop, manufacture and deliver high quality and highly differentiated polymeric biomaterials at a reduced cost.

We are ready to work with you today, and the sooner we begin collaborating, the quicker you can expand your technology platform and product portfolio. In addition, our ongoing research and development work promises the potential for even more exciting opportunities. So contact us today to discuss how we can meet your current needs and work together for a better tomorrow.

Rao S Bezwada, Ph.D.

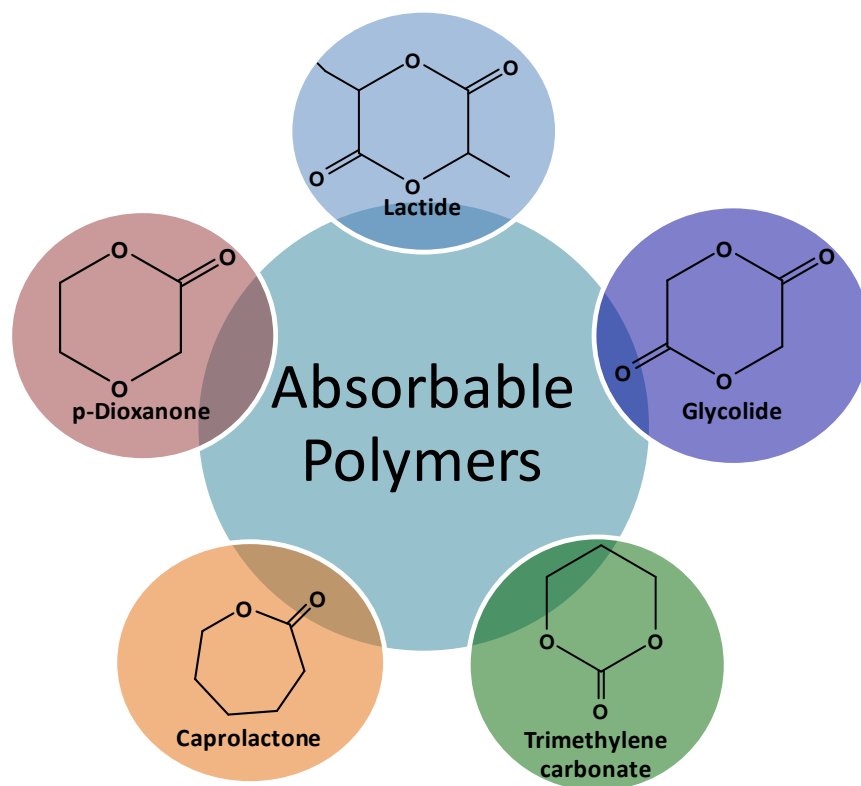


Absorbable Polymers

Polymers that are designed to degrade under physiological conditions are referred to as absorbable polymers. These polymers are sometimes also referred to as biodegradable or bioerodible or bioabsorbable polymers. Synthetic absorbable polymers are generally classified into the following categories:

- (a) Polyesters
- (b) Polyorthoesters
- (c) Polyanhydrides
- (d) Polyesteramides
- (e) Polyoxaesters

Of these synthetic absorbable polymers, polyesters find numerous applications in medical, surgical and controlled delivery applications and are the key components of a majority of absorbable medical devices, ranging from sutures, staples, orthopedic screws and implantable surgical devices to tissue engineering scaffolds.





Most of the synthetic absorbable polyesters are produced by ring opening homopolymerization or copolymerization of five key lactone-based, safe and biocompatible monomers. These are glycolide, L-lactide and its isomers, ϵ -caprolactone, p-dioxanone and trimethylenecarbonate (TMC). **Figures 1 and 2** depict the structures of homopolymers and copolymers, respectively, derived from the ring opening polymerization (ROP) of these monomers, and medical devices based on them

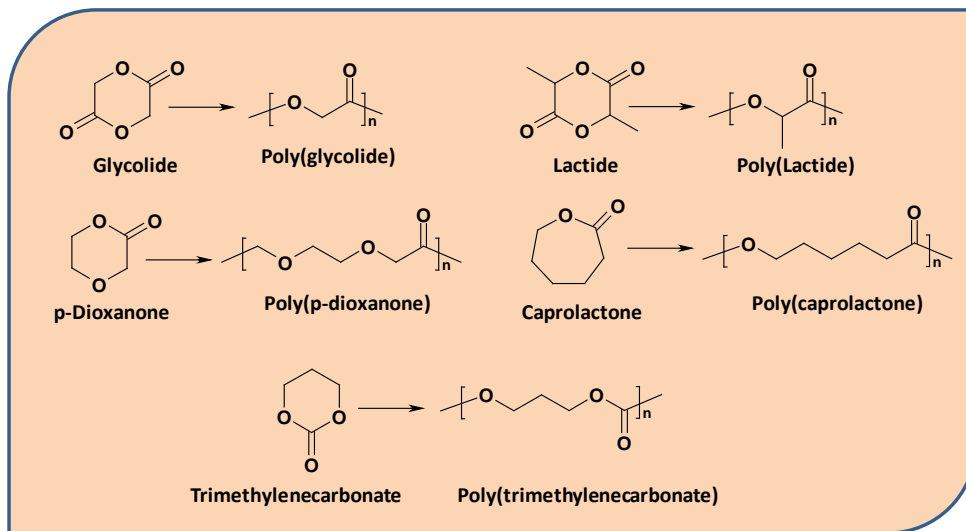


Figure 1. Synthetic absorbable homopolyesters

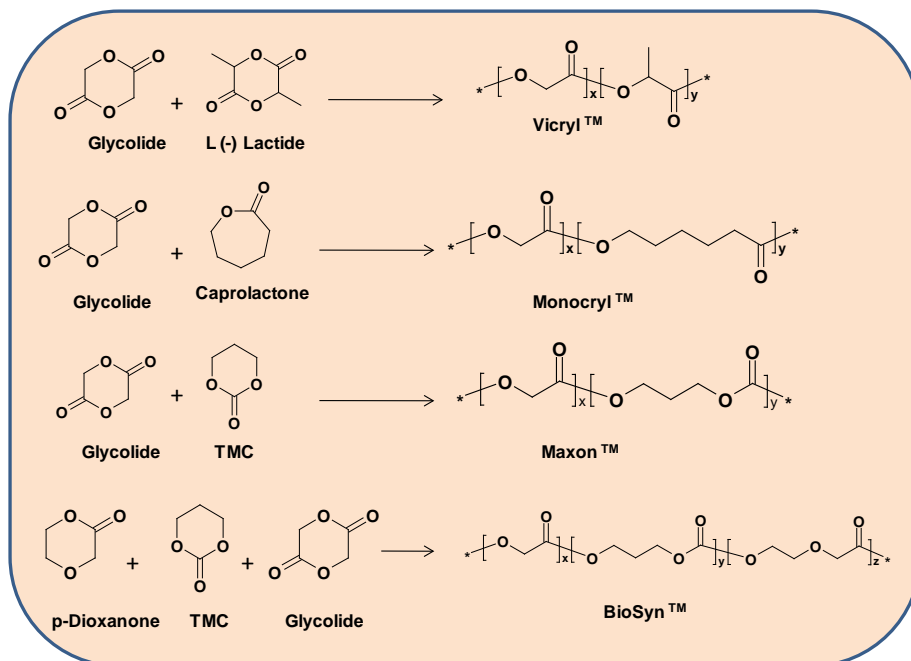


Figure 2. Absorbable copolymers and commercial products



Standard Absorbable Polymers from Bezwada Biomedical

Bezwada Biomedical supplies a wide range of absorbable polymers. Below you will find our selection of products for use in medical device and controlled release applications

1. Available Absorbable homopolymers

Polymer	Molecular Weight (Da)
Poly(L-lactide)	500-200,000
Poly(DL-lactide)	500-100,000
Poly(glycolide)	500-100,000
Poly(caprolactone)	500-100,000
Poly(p-dioxanone)	500-100,000
Poly(TMC)	500-50,000

2. Available Absorbable Copolymers of Lactide, Glycolide and Caprolactone

Copolymer	Molecular Weight (Da)
L-Lactide/DL-Lactide	500-200,000
L-lactide/Glycolide	500-300,000
L-lactide/Caprolactone	500-300,000
DL-Lactide/Glycolide	500-200,000
DL-Lactide/Caprolactone	500-200,000
Glycolide/Caprolactone	500-100,000
L-lactide/Glycolide/Caprolactone	500-100,000
DL-Lactide/Glycolide/Caprolactone	500-100,000

3. Available PDS Copolymers

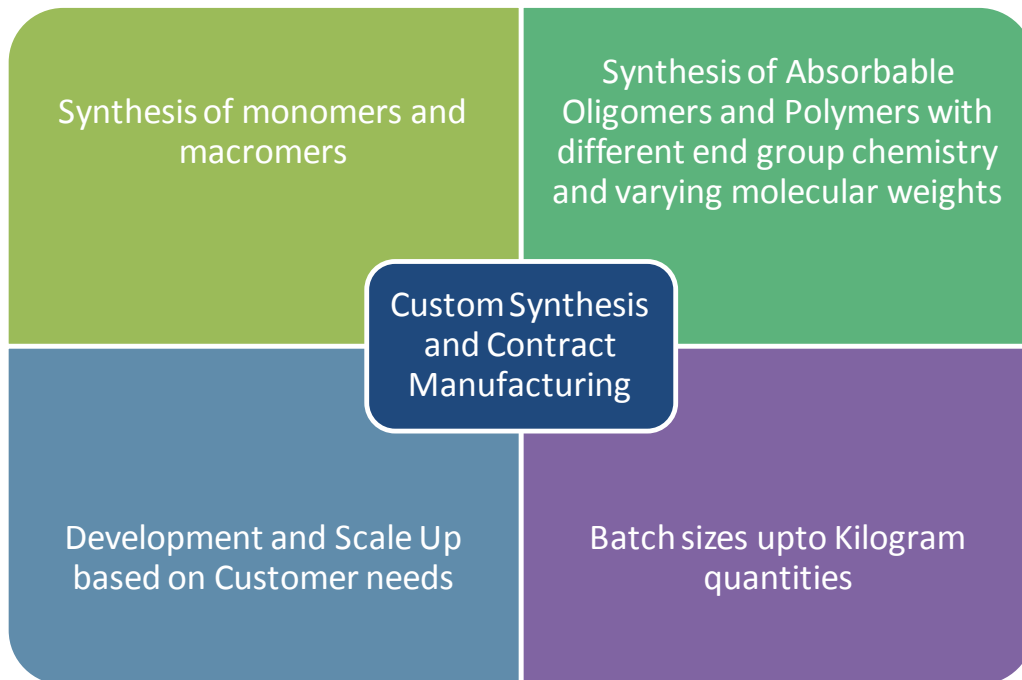
Copolymer	Molecular Weight (Da)
PDS/DL-Lactide	500-100,000
PDS/Glycolide	500-100,000
PDS/Caprolactone	500-100,000
PDS/L-Lactide	500-100,000
PDS/DL-Lactide/Caprolactone	500-100,000
PDS/Glycolide/Caprolactone	500-100,000



These absorbable polymers and copolymers can be used in various biomedical applications including implantable devices, tissue engineering, elastomeric films, controlled drug delivery and absorbable coatings.

Custom Synthesis and Contract Research Services

In addition to our standard absorbable polymers, we also provide custom synthesis, material characterization, contract research and development of absorbable polymers.



Please feel free to contact us to discuss your specific requirements. In case you need larger quantities or custom synthesis or you do not see an absorbable polymer that you need for your research, please contact us at 908-334-1575 or email us at info@bezwadabiomedical.com. Your suggestions are welcome and appreciated.

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