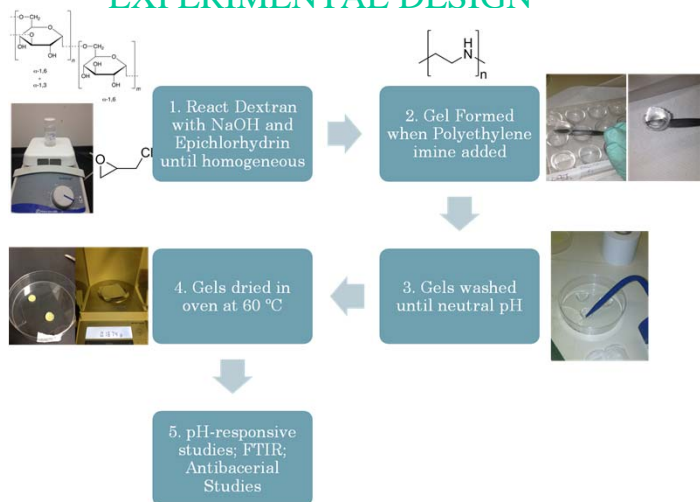


## INTRODUCTION

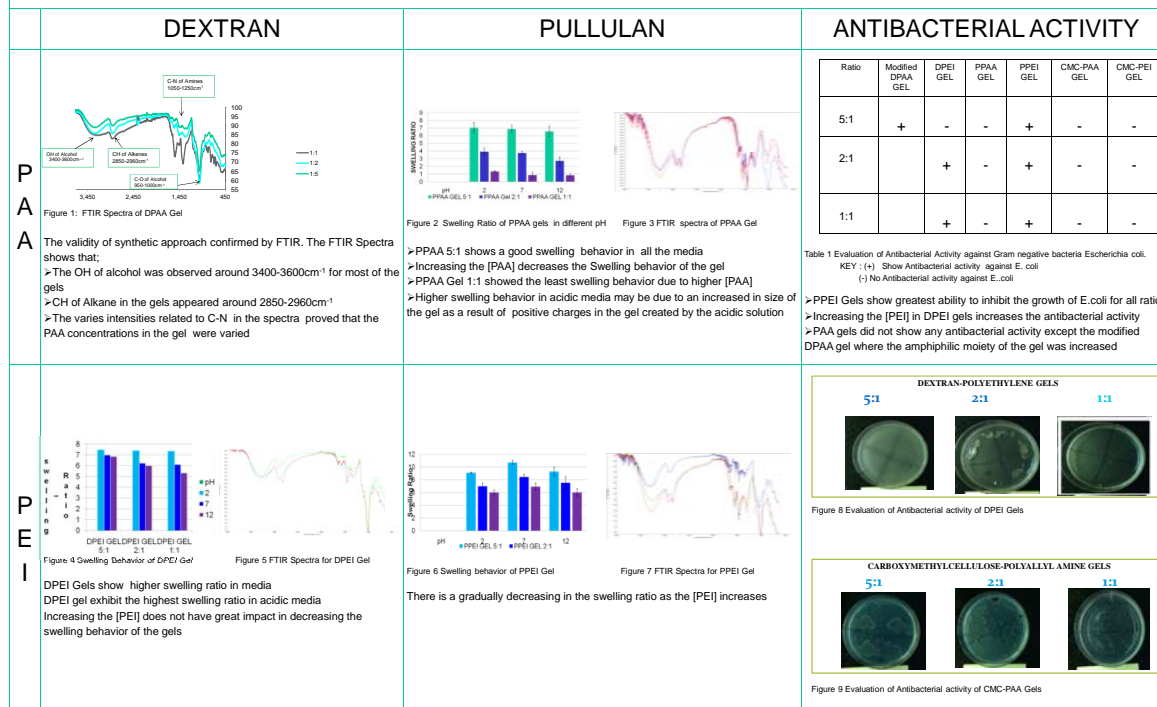
Hydrogels are three dimensional, cross-linked networks of water soluble polymers. Hydrogels have biochemical application such as tissue engineering and regeneration, biosensors, contact lenses, wound dressing and drug delivery. Ionic hydrogels swell or de-swell depending on certain external conditions, such as, pH, temperature, ionic strength and buffer composition. pH-sensitive hydrogels can be anionic or cationic depending on the nature of the ionizable moieties on their backbones. This research tries to synthesize various cationic hydrogels from various polysaccharides by cross linking them with polyamines using epichlorohydrin.

## EXPERIMENTAL DESIGN



RATIO	DEXTRAN	PULLUAN	CARBOXYMETHYL CELLULOSE
5:1, 2:1, 1:1	DPAA GEL	PPAA GEL	CMC-PAA GEL
	POLYALLYLAMINE	DPEI GEL	PPEI GEL
			CMC-PEI GEL

## RESULTS



Conclusion: We successfully prepared the cationic hydrogels from polysaccharides and polyamines. This is evident from the FTIR spectra.

These cationic hydrogels are also pH-responsive and exhibit antibacterial activities.

Reference: [1] Hoffman AS. Polym Prepr 1990;31(1):220.  
[2] Ratner B. In: Williams DF, editor. Biocompatibility of clinical implant materials, vol. 2. Boca Raton, FL: CRC Press, 1981. p. 145-53.