

# Wastewater / Environmental Uses of gPGA



# Poly-gamma-glutamic Acid has 2 major uses in the wastewater / environmental area

***1. Biopolymer Flocculant***

***2. Metals and radionuclide removal***

# Biopolymer Flocculant

Typically Polyacrylamide, a synthetic polymer, is used.

Recently given rise to environmental concerns due to its degradation into acrylamide

- Neurotoxin
- Carcinogen

gPGA is food grade, allowing not just for wastewater treatment, but other water treatment in the food and fermentation industries.

# Synthetic polymers - polyacrylamide

Polyacrylamide is a synthetic polymer which has recently given rise to environmental concerns due to its degradation into acrylamide

- Neurotoxin
- Carcinogen

# Metals and radionuclide removal

gPGA is a strong anionic polymer. It is capable of capturing and binding metal cations ( $\text{Ni}^{+2}$ ,  $\text{Cu}^{+2}$ ,  $\text{Mn}^{+2}$ ,  $\text{Al}^{+3}$ , and  $\text{Cr}^{+3}$ )

gPGA has also been shown to bind  $\text{U}^{+4}$  in a binuclear, bidentate fashion.



# Questions

Al Prescott, President

978-764-8604

[alprescott@crescentinnovations.com](mailto:alprescott@crescentinnovations.com)