**Introduction**

Polymerization of high internal phase emulsions (polyHIPEs) is a relatively new method for the production of high-porosity scaffolds. PolyHIPE has a big advantage for tissue engineered soft tissues since the architecture of the HIPE can be tuned by variable factors. It is desirable for scaffolds to possess high surface areas (>500 m²/g), high porosities (>90%), and a high degree of pore interconnectivity to facilitate transport of nutrients and oxygen as well as cell migration and cell attachment. Previously studied polyHIPE systems require either toxic emulsion stabilizer or high cure temperatures which prohibit their use as an injectable polyHIPE scaffold. Here, we suggest the formation of stable injectable gelatin HIPE cross-linked with non-toxic genipin.

**Control release**

**Sample preparation**

![Image of HIPE samples with and without genipin](image)

**Control release Result**

![Graph showing control release results](image)

**Conclusion**

- Biocompatible gelatin HIPE could be prepared extremely simply by homogenization and addition of cross-linker (Figure 1).
- The average pore diameter decreased as the gelatin concentration increased (Figure 3). More successful isolated emulsion with less aggregation is stabilized with higher wt% of gelatin polymer.
- 1.5% gelatin HIPE has pore diameter of 100-200 um which fulfills the requirement for a good small droplets for bioavailability (Figure 4).
- HIPE was injectable under room temperature and was stable at high temperature after the gelation (Figure 5).
- Control release with genipin cross-linker showed slower rate of release than the control (Figure 8).

**Acknowledgement**

Great appreciation to my supervisor, Professor Ngai To and his Ph.D student Mr. SHENG, Yifeng for their guidance and support throughout the whole project.

**References**