Engineering: Designing biomaterials for drug delivery & cell culture

\[
\frac{1}{M_c} = \frac{2}{M_n} \left[ \frac{V_0}{V_1} \left( \ln \left( 1 - \frac{v_{2,s}}{2} \right) + v_{2,s} + \chi_2 v_{2,s}^2 \right) \right]^{1/3} - \frac{v_{2,s}}{2}
\]

\[
D_T(\rho_x) = D_T,\infty e^{-\gamma/(Q-1)} \left( 1 - \frac{T}{\xi} \right)
\]

Chemistry: Synthesis of functional polymers, peptides, & proteins

Biology: Understanding multi/pluripotent stem cell & cancer cell fate

Artificial Stem Cell Niche
Design chemically-defined and dynamic hydrogels for expansion and differentiation of multipotent & pluripotent stem cells

Liver & Pancreas Regeneration
Study organization and function of hepatocytes and pancreatic islets in biomimetic hydrogels with tunable properties

Cancer Bioengineering
Evaluate the impact of hypoxia and cell-matrix interactions on cancer cell invasion, proliferation, and chemoresistance

Interested in research opportunities?
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