

Squaramide-based supramolecular materials for 3D cell culture applications

Tong, C.

Citation

Tong, C. (2021, March 10). *Squaramide-based supramolecular materials for 3D cell culture applications*. Retrieved from https://hdl.handle.net/1887/3151624

Version:	Publisher's Version
License:	<u>Licence agreement concerning inclusion of doctoral thesis in the</u> <u>Institutional Repository of the University of Leiden</u>
Downloaded from:	https://hdl.handle.net/1887/3151624

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <u>https://hdl.handle.net/1887/3151624</u> holds various files of this Leiden University dissertation.

Author: Tong, C. Title: Squaramide-based supramolecular materials for 3D cell culture applications Issue Date: 2021-03-10

Stellingen Behorend bij het proefschrift

Squaramide-based supramolecular materials for 3D cell culture applications

- 1. Supramolecular materials with responsiveness and self-healing properties are appealing for engineering cell microenvironment. However, the development of materials with dynamically tunable properties is still largely required to understand some complex biological processes. *Chapter 1, this thesis*
- 2. Squaramides with dual hydrogen bonding and aromatic characters are excellent and useful non-covalent building blocks to fabricate the self-recovering supramolecular hydrogels as synthetic scaffolds for 3D cell culture. *Chapter 2, this thesis*
- 3. Chemical structural modification or introducing the second network offers a simple and effective method to overcome the major drawback of the supramolecular hydrogels due to their weak mechanical stiffness. *Chapter 3 and 5, this thesis*
- 4. Light is an effective strategy to spatially and temporally control the properties of hydrogel materials. *Chapter 3, 4, and 5, this thesis*
- 5. Cyclic 1,2-Dithiolane could be used as an outstanding photoactive motif to fabricate and modify both the biocompatible supramolecular and polymer hydrogels. *Chapter 3, and chapter 4, this thesis*
- 6. Double network hydrogels based on supramolecular hydrogels and polymeric hydrogels could directly improve both their mechanical stiffness and strength, leading to them suitable for the 3D culture of hard tissues. *Chapter 5, this thesis*
- 7. Bioactive cues (e.g., RGD peptide) are necessary to offer the ligand sites for the cells to bind and maintain regular cell activities through cell-material interactions. *Chapter 3, and chapter 5, this thesis*
- 8. There are more methods than problems.
- 9. If you are a great experimenter in the lab, you can also become a very good cook at home.
- 10. There is no shortcut in life, every step is the only way.