

## Propositions / Stellingen

### Understanding and improving thermosensitive smart drug delivery systems

1. Most ligand-based “actively-targeted” drug delivery systems cannot significantly improve tumoral drug level because of the passive EPR-based accumulation of these nanoparticles. (This thesis)
2. Thermosensitive liposomes in combination with local hyperthermia remarkably improves site-specific drug release. (This thesis)
3. Idarubicin, a chemotherapeutic drug used clinically for non-solid tumor treatment, can also show desirable efficacy for solid tumor treatment when encapsulated in hyperthermia and thermosensitive liposome mediated system. (This thesis)
4. In the development of thermosensitive liposome-mediated drug delivery, it is not only important to maximize drug release by the liposome but also to maximize the uptake capacity of the drug by the tumor cells. (This thesis)
5. There is no “best” liposome formulation to choose for tumor treatment but the appropriate formulation gives best performance. (This thesis)
6. Most studies of tumor resistance to anticancer drugs consider only cellular and genetic causes operative at the level of a single cell. Large distances between blood vessels in solid tumors, the composition of the extracellular matrix, cell–cell adhesion, high interstitial fluid pressure, lack of convection, drug metabolism and binding contribute to limited drug distribution, which limits their effectiveness. (Nature Reviews, 2006)
7. Enhanced permeability and retention is the primary rationale for using nanoparticles in oncology; however only 0.7% (median) of the administered nanoparticle dose is delivered to a solid tumor. Development of nanoparticles that release therapeutic agents in response to the tumor microenvironment or an external may improve the delivery of nanomedicine. (Nature Reviews 2010 & 2016)
8. For cancer treatment in the future, maybe we should find a strategy to live with cancer peacefully rather than trying to kill all tumor cells, as Darwin said “it is not the strongest of the species that survive, but the one most adaptable to change.”
9. The supreme healer cures the illness that is still obscure. The good healer cures the illness that is about to break out. The mediocre healer is only able to cure when the illness is fully manifested.  
上医医未病之病，中医医欲病之病，下医医已病之病。 (*Huang di nei jing*)
10. Good fortune follows upon disaster; disaster lurks within good fortune.  
祸兮，福之所倚；福兮，祸之所伏。 (*Lao Zi (Tao Te Ching)*)
11. The light that we see from distant galaxies left them millions of year ago. Thus when we look at the universe, we are seeing it as it was in the past. (*A Brief History Of Time*)

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