

Supporting Information

Development of novel hydrogels based on Salecan and poly(N-isopropylacrylamide-co-methacrylic acid) for controlled doxorubicin release

*Xiaoliang Qi, Wei Wei, Junjian Li, Gancheng Zuo, Xinyu Hu, Jianfa Zhang, Wei Dong**

**Center for Molecular Metabolism, Nanjing University of Science & Technology,
Nanjing 210094, China**

**Corresponding author: E-mail: dongwei@njust.edu.cn (W. Dong).*

Table S1. The concentration of Salecan in washing medium and hydrogel

Composition	The content of Salecan in hydrogel (mg)	The content of Salecan in washing medium (mg)
SPNM1	0.33	59.67
SPNM2	0.67	119.33
SPNM3	1.18	178.82
SPNM4	0.98	179.02
SPNM5	1.06	178.94

Table S2. Drug loading efficiency of the Salecan/PNM hydrogels

Composition	Drug loading efficiency (%)
SPNM1	75.1
SPNM2	78.4
SPNM3	82.3
SPNM4	81.1
SPNM5	73.4

Table S3 The theoretical water content of the semi-IPN hydrogels used for rheology assay

Composition	The content of water in hydrogel (%)
SPNM1	95.8
SPNM2	96.7
SPNM3	97.6
SPNM4	97.1
SPNM5	96.3

Fig. S1. FTIR spectra of semi-IPN and physical mixture of Salecan and PNM.

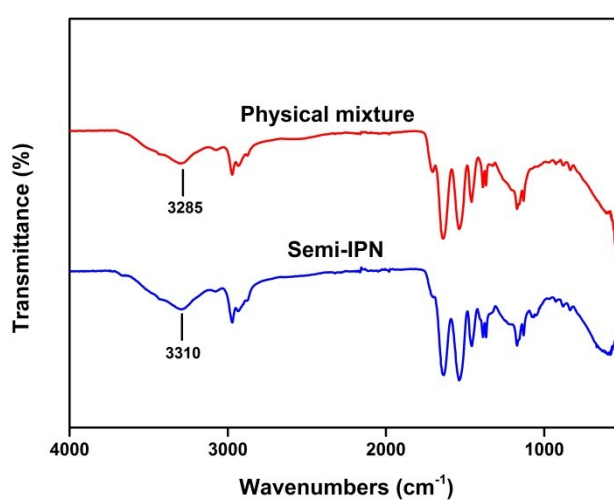


Fig. S2. Dynamic Swelling curves of the semi-IPN hydrogels in pH 5.0 PBS at 25 °C.

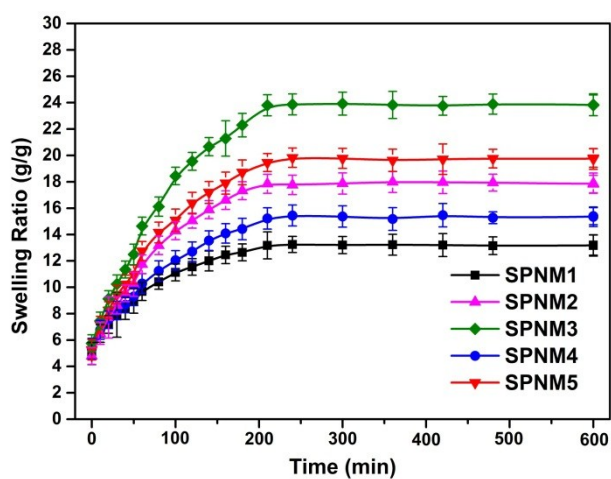


Fig. S3. Dynamic Swelling curves of the semi-IPN hydrogels in pH 7.4 PBS at 37 °C.

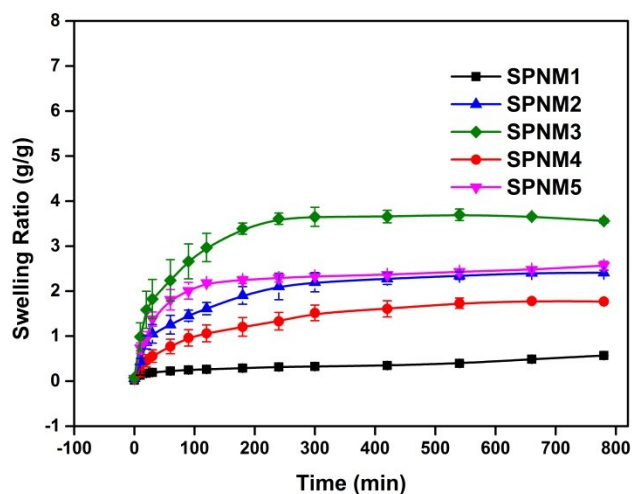


Fig. S4. Dynamic Swelling curves of the semi-IPN hydrogels in pH 5.0 PBS at 37 °C.

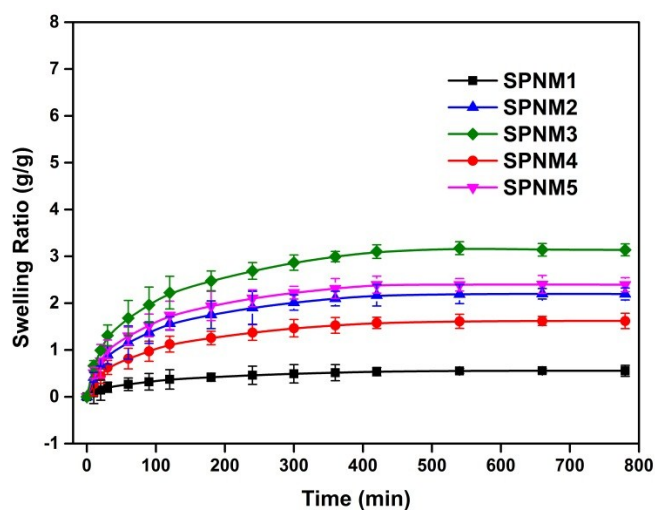
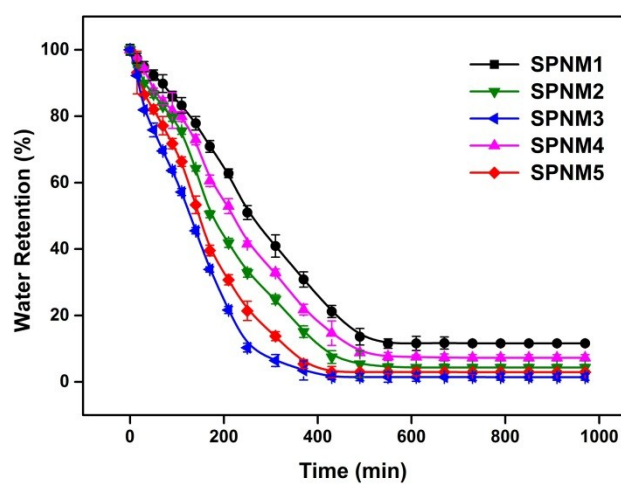


Fig. S5. Water retention curves of semi-IPN in pH 5.0 PBS at 25 °C.



As revealed in Fig. S5, the semi-IPN hydrogels were characterized by a rapid dehydration that occurred during the first 10 h. Further, the loss of absorption water was basically stable up to 16 h. Compared with the water retention data (Fig 4D), the water molecules in the hydrogel interior were hard to diffuse out. An explanation was that, at temperatures below the LCST, the PNIPAAm component of the semi-IPN hydrogel was swellable and formed hydrogen bonds with water molecules, resulting in a relatively slow deswelling.