

Supplementary materials

Table S1. The gelation temperature of different hydrogel formulae.

| Fomula | Ratio of P407/P188/ HP-β-CD (% , w/w/w) | Gelation temperature ($^{\circ}$ C) |
|---------------|---|---|
| 1 | 16/0/0 (0.32g/0g/0g in 4.68 ml ddH₂O) | 27.2 \pm 0.3 |
| 2 | 16/1/1 (0.32g/0.02g/0.02g in 4.64 ml ddH₂O) | 28.5 \pm 0.2 |
| 3 | 16/2/2 (0.32g/0.04g/0.04g in 4.6 ml ddH₂O) | 30.0 \pm 0.2 |
| 4 | 18/0/1 (0.36g/0g/0.02g in 4.62 ml ddH₂O) | 27.5 \pm 0.4 |
| 5 | 18/1/2 (0.36g/0.02g/0.04g in 4.58 ml ddH₂O) | 28.2 \pm 0.1 |
| 6 | 18/2/0 (0.36g/0.04g/0g in 4.6 ml ddH₂O) | 29.3 \pm 0.2 |
| 7 | 20/0/2 (0.4g/0g/0.04g in 4.56 ml ddH₂O) | 22.5 \pm 0.4 |
| 8 | 20/1/0 (0.4g/0.02g/0g in 4.58 ml ddH₂O) | 24.9 \pm 0.3 |
| 9 | 20/2/1 (0.4g/0.02g/0.04g in 4.54 ml ddH₂O) | 25.9 \pm 0.5 |

Table S2. Different mathematical models on the release behavior of BBH from the hydrogel system.

| Mathematical models | Regression equation | r² |
|----------------------------|--------------------------------|----------------------|
| Higuchi | $Q = 4.5995 t^{1/2} - 2.8283$ | 0.9981 |
| zero-order release | $Q = 0.2094t + 15.801$ | 0.945 |
| first-order release | $\ln(1-Q) = -0.0046t - 0.0993$ | 0.9886 |

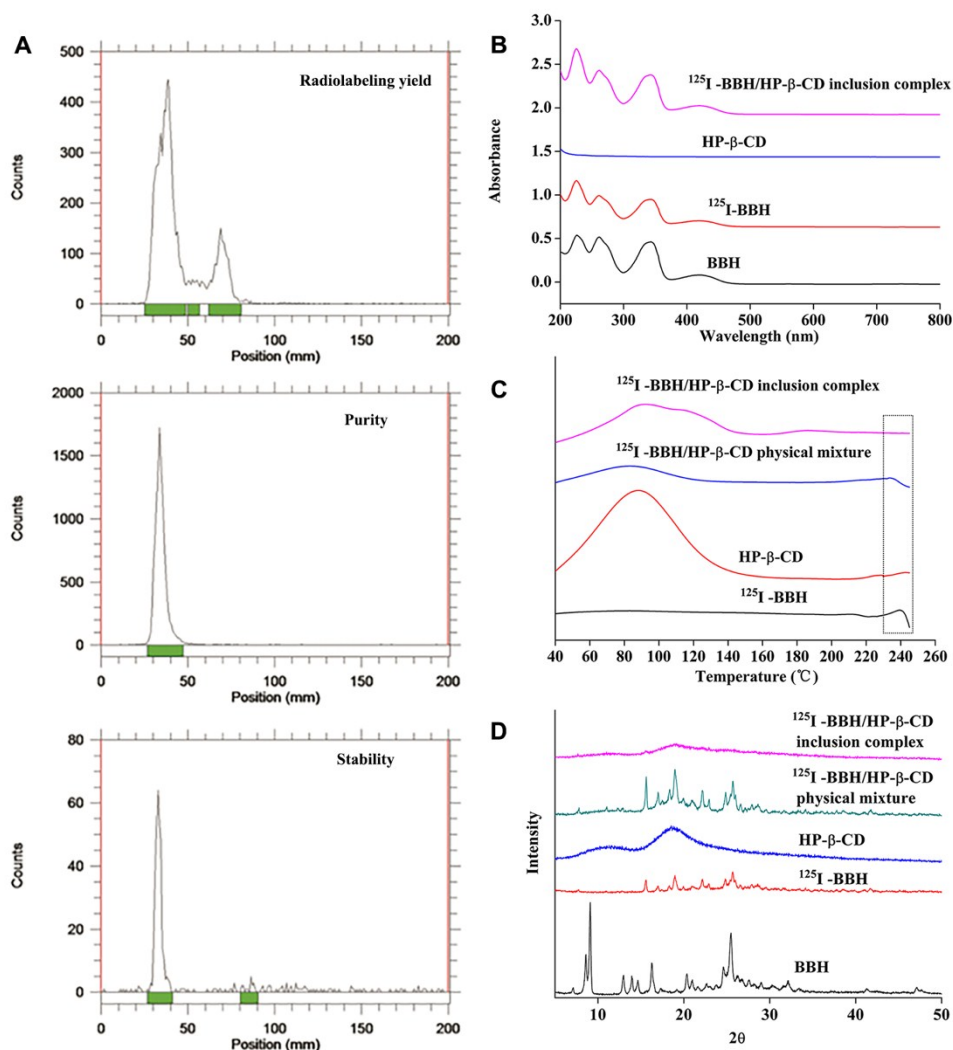


Figure S1. Characterization of ^{125}I -BBH and ^{125}I -BBH/HP- β -CD inclusion complex. (A) The radiolabeling yield, purity and stability of ^{125}I -BBH. (B) UV-Vis spectra, (C) DSC and (D) XRD spectrograms of HP- β -CD, BBH, ^{125}I -BBH, ^{125}I -BBH/HP- β -CD inclusion complex and ^{125}I -BBH/HP- β -CD physical mixture.

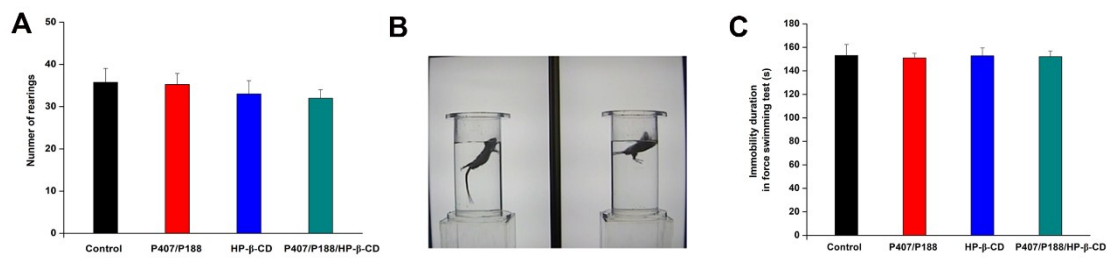


Figure S2. Effect of HP-β-CD, P407 and P188 on mice behavioral despair model.

(A) Poloxamer and HP-β-CD used in this study have no effect on the number of rearing in the open field test; (B) The live figure of mouse forced swimming test; (C) Poloxamer and HP-β-CD used in this study have no effect on the mouse forced swimming test.