Supplementary information for

Injectable Catechin-Based Supramolecular Hydrogel for Highly Efficient Application in HPV-associated OSCC

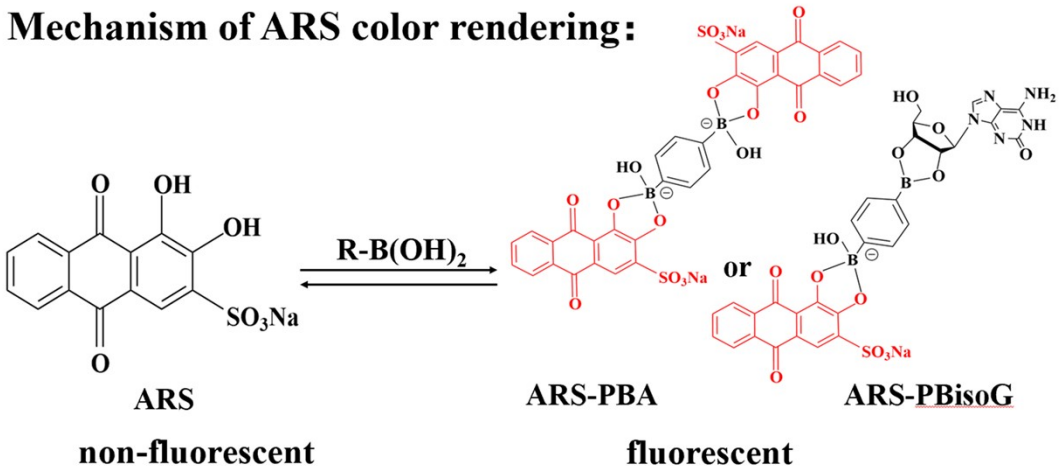
Shangxue Lei,‡[a, b] Xiaopei Hu,‡[a] Shaojuan Song,[a] Yuting Zhang,[a] Hang Zhao,[a]

Xiaoping Xu*[a] and Hongxia Dan*[a]

[a] State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, Chinese Academy of Medical Sciences Research Unit of Oral Carcinogenesis and Management, Med-X Center for Materials, West China Hospital of Stomatology, Sichuan University, Chengdu, Sichuan 610041, P. R. China.
[b] College of Stomatology, Chongqing Medical University, Chongqing 401147, China.

‡ These authors contribute equally to this work.

* These authors are the corresponding authors.
Corresponding E-mails: xiaoping327@126.com; hxdan@foxmail.com
Other E-mails: 2936157197@qq.com; 961862374@qq.com; 1792993297@qq.com; zhangyuting0224@outlook.com; zhaohangahy@scu.edu.cn
The ORCiDs are: https://orcid.org/0000-0001-5598-9731(Shangxue Lei), https://orcid.org/0000-0002-6139-4491(Xiaopei Hu), https://orcid.org/ 0000-0001-7130-3007(Shaojuan Song), https://orcid.org/0000-0001-8009-0840(Yuting Zhang), https://orcid.org/0000-0003-1268-0616(Hang Zhao), https://orcid.org/0000-0002-0499-2030(Xiaoping Xu), and https://orcid.org/0000-0002-9765-0012(Hongxia Dan), respectively.



Scheme S1 The fluorescence generation mechanism of ARS (PBA as an example).

Table S1. Inhibitory effects of different treatments on HPV$^+$ OSCC tumour

HPV$^+$ OSCC tumour	PBS	0.05 M 5-FU	0.025 M CPBisoG	0.05 M CPBisoG
Tumour volume (mm^3)	1585 ± 205.9	1025 ± 437.8	1127 ± 175.1	852 ± 294.9
Tumour inhibition rates (%)	□	35.36	28.9	46.25
P value (vs PBS)		0.043	0.141	0.019

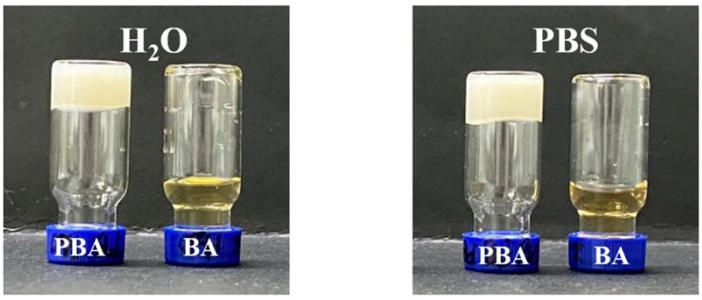


Fig. S1 PBA was chosen to construct dynamic phenyldiborate ester bonds. The concentration of each component in the experiment is the same, 0.1 M.

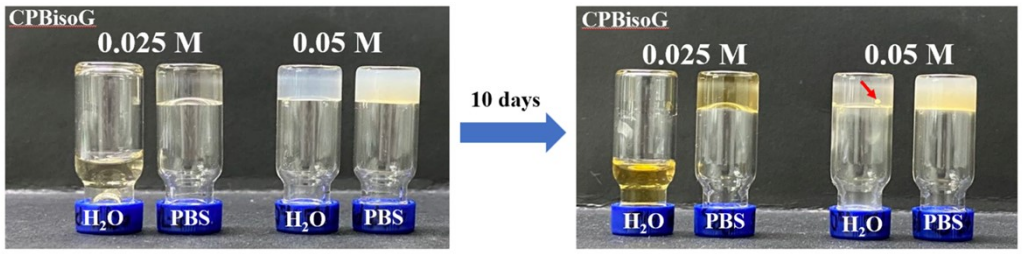


Fig. S2 PBS was chosen as the solvent of CPBisoG hydrogel system. The critical gelation concentration of CPBisoG in PBS system was 0.025 M, while 0.05 M in the H_2O system. And on the 10th day after gel formation, precipitation was observed in 0.05 M CPBisoG hydrogel with H_2O as solvent, but not in the equal concentration of CPBisoG hydrogel with PBS as solvent.

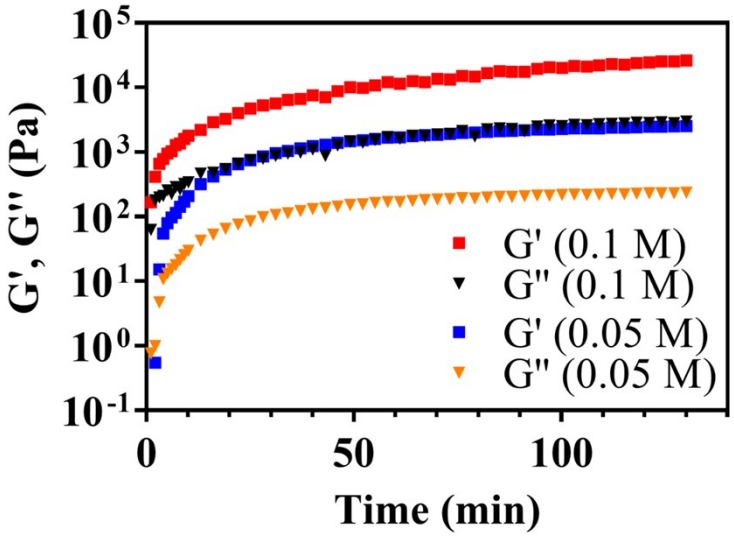


Fig. S3 The time sweep tests to investigate the viscoelastic properties of 0.05 M and 0.1 M CPBisoG hydrogel. The modulus (G' and G'') were positively correlated with CPBisoG concentration.

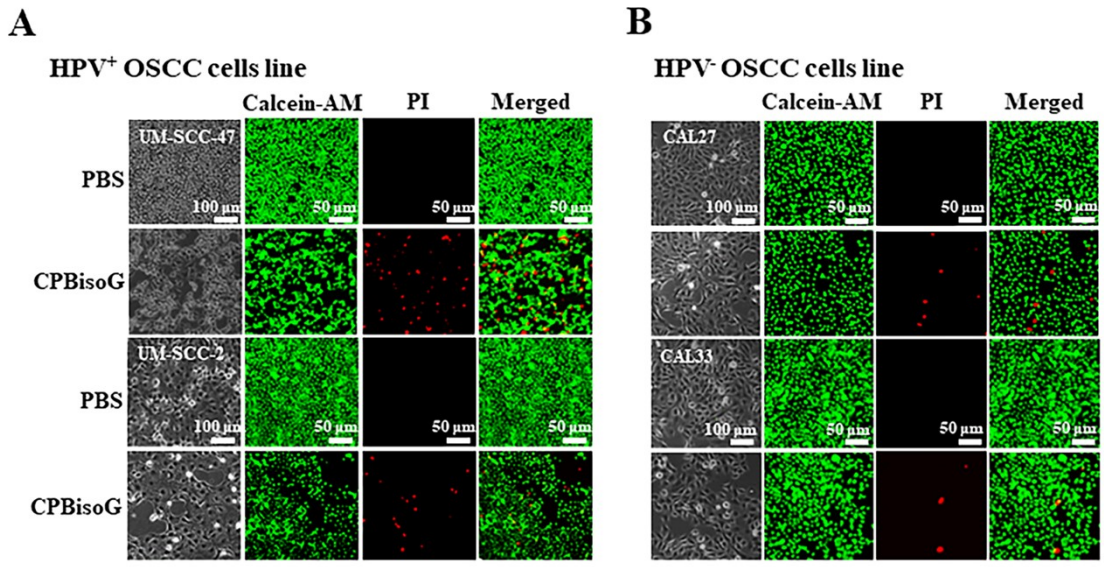


Fig. S4 Phase-contrast images and the alive/dead cell images costained with calcein-AM (live cells, green) and PI (dead cells, red) of HPV^+ OSCC cell lines (UM-SCC-47, UM-SCC-2) and HPV^- OSCC cell line (CAL27, CAL 33), which was exposed to 0.5 mM CPBisoG and for 24 h, respectively. PBS as the control. Scale bar: 100 μm and 50 μm, respectively.

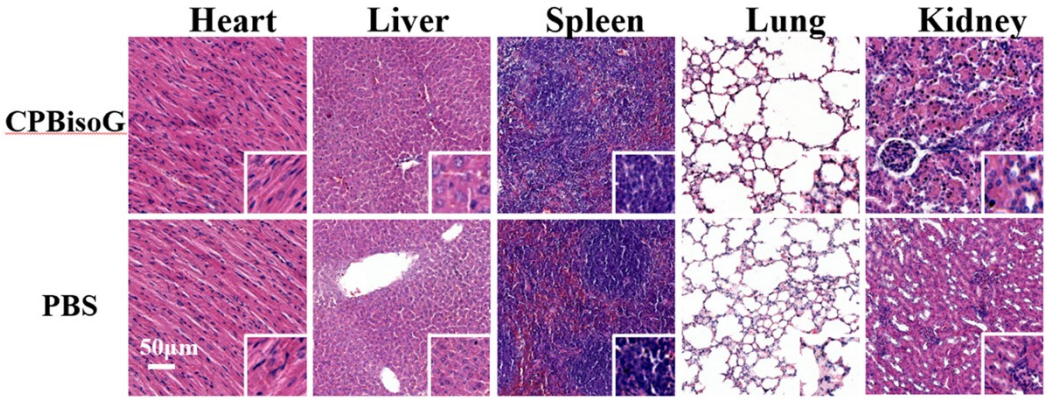


Fig. S5 H&E staining images of the main organs tissues from the sacrificed mice treated with 0.05 M CPBisoG hydrogel.