

**Electronic Supplementary Information for**

**PET image-guided kidney injury theranostics enabled by**

**bipyramidal DNA framework**

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| Oligonucleotide | Sequence   |
|-----------------|--|
| a               | TTTTTTTTTTTTTTTTTTCTAAGTCTGAAATTATCACCCGCCATAGTAGCGTATCACCAGGCAGTTGAGCGAACATTC |
| b               | TTTTTTTTTTTTTTTTTTCTTGCTACACGCTCAGACTTAGGAATGTTCCATGCGAGGGTCCAATACCGCGATTACAG  |
| c               | GGTGATAAACTGTAGCAAGCTGTAATCCCGGGAAGAGCATGCCCATCCCTACTATGGCG                    |
| A               | TTTTTTTTTTTTTTTTTTCTGCGGGATGCTCAACTGCTGGTGATACCTCTAGTCTCTACGTCAAGTAAAGACCTTAG  |
| B               | CCTGCGATGCATCCGGCAGCTAAGGTTCAAGTTCTGCGGCTTCACGGCGGTATTGGAC                     |
| C               | CTCTCCCGCGTGAAGCGGCAGGAACCTTFACTTGACGTAGAGACTAGAGGATGGGCATG                    |
| NOTA-A20        | NOTA-AAAAAAAAAAAAAAAAAAAAA   |
| Cy5-A20         | Cy5-AAAAAAAAAAAAAAAAAAAAA  |

Table S1. The sequence information (from 5' to 3') of the oligonucleotide single strands used in the study.

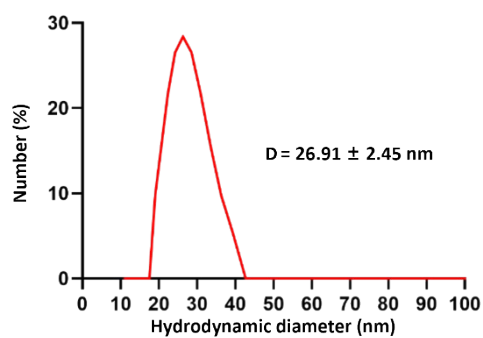


Figure S1. DLS analysis of BDF.

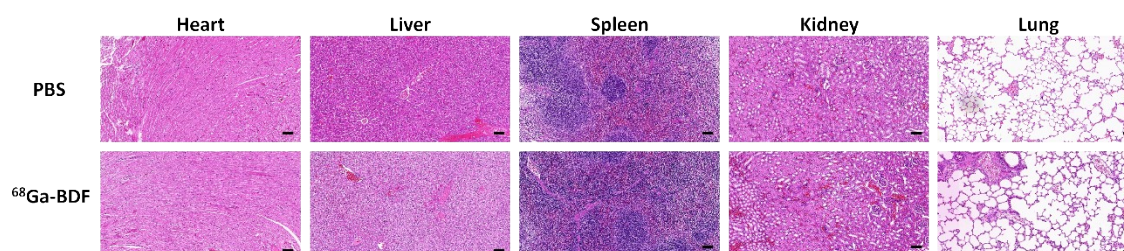


Figure S2. H&E staining results of major organs (heart, liver, spleen, kidney and lung) collected from mice treated with  $^{68}\text{Ga}$ -BDF or PBS. Scale bar = 50  $\mu\text{m}$ .

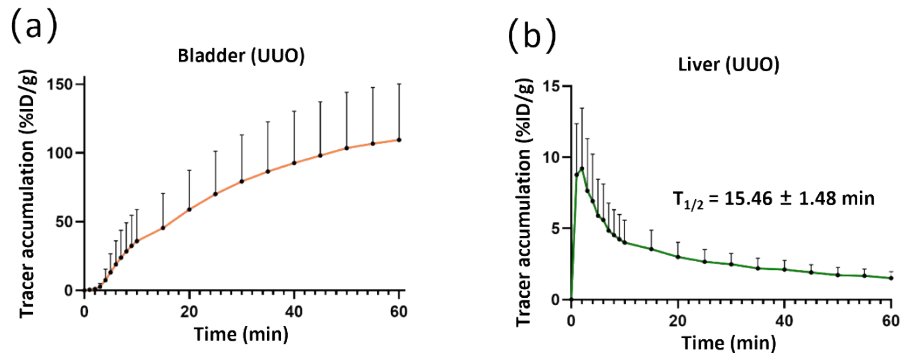


Figure S3. TAC of bladder (a) and liver (b) in UUO model.

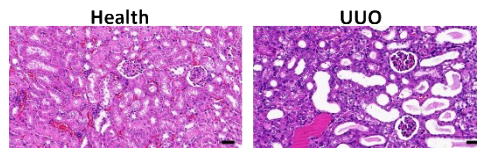


Figure S4. H&E staining results of kidneys in healthy and UUO model. Scale bar = 20  $\mu\text{m}$ .

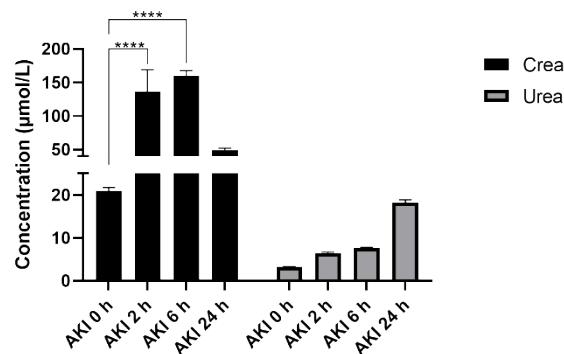


Figure S5. Serum creatinine and urea nitrogen levels in plasma at 0, 2, 6 and 24 h after 50% glycerol injection (n=3). \*\*\*\* $p < 0.0001$

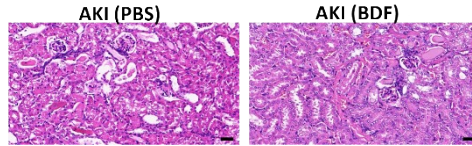


Figure S6. H&E staining results of kidneys in AKI model mice after treatment with PBS or BDF. Scale bar= 20  $\mu\text{m}$ .

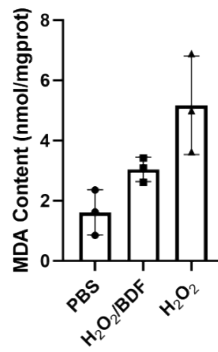


Figure S7. MDA content of HEK293 cells after incubating with PBS, H<sub>2</sub>O<sub>2</sub>/BDF or H<sub>2</sub>O<sub>2</sub>.