**Supplementary materials**

**Table S1.** Chemical modification of CASF with different masses of the PEG-MMP2SSP

|  |  |  |  |
| --- | --- | --- | --- |
| Serial number | The quantity of CASF (mg) | The quantity of PEG-MMP2SSP (mg) | PEG-MMP2SSP /CASF mass ratio (w/w) |
| 1 | 100 | 2 | 1/50 |
| 2 | 100 | 1 | 1/100 |
| 3 | 100 | 0.5 | 1/200 |
| 4 | 100 | 0.33 | 1/300 |
| 5 | 100 | 0.25 | 1/400 |

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**Figure S1.** Transfection efficiency of HT1080 cells transfected with CASFMP/pDNA complexes at different mass ratios for 24 h. a: untreated cells; b: C200ASFMP/pDNA (64/2); c: C100ASFMP/pDNA (64/2); d: C50ASFMP/pDNA (64/2); e: C50ASFMP/pDNA (128/2); f: 25 kDa PEI/pDNA (10/2).