**SUPPORTING INFORMATION**

Preparation of glycine conjugated MTX (MTX-gly)

The glycine (20mg) was dispersed in 40ml buffer solution of pH-6.0. At same time, 20 mL of MTX solution (10-4M) was activated by adding 50.0mg of EDC at pH-6.0 and the solution was kept stirring for 24h. Then the activated MTX solution was added drop wise to the above glycine solution with constant stirring. Then stirred continuously for 3h at room temperature and the solution was kept for the next step.



**Scheme S1** Preparation of glycine conjugated MTX

Table S1. Calculations of TGA mass loss and composition.

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| --- | --- |
| **Composite** | **Calculations** |
| GO | * Mass remaining at 900 °C = 32%
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| GO-NH2 | * Mass remaining at 900 °C = 20.8%. All of this is GO.
* Therefore, content of GO = 100 × 20.8/32 = 65 % w/w.
* By difference, content of EDA unit = 100 – 65 =35 % w/w
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| MTX- GO-NH2 | * Mass remaining at 900 °C = 16%. All of this is GO.
* Therefore, content of GO = 100 × 16/32 = 50 % w/w
* The ratio of GO:NH2 must be the same as in GO-NH2, and thus content of EDA unit = 35/65 × 50 = 26.9 % w/w
* And by difference, content of gly-MTX = 100 – 50 – 26.9 = 23.1 % w/w
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| MTX- GO@Gel-HA | * Mass remaining at 900 °C = 11 %. All of this is GO.
* Content of GO = 100 × 11/32 = 34.38 % w/w
* The ratio of GO:MTX must be the same as in MTX- GO-NH2, and thus content of MTX = 23.1/50 ×34.3 = 15.8 % w/w
* And by difference, the content of Gel-HA = 100 – 34.3 – 15.8 = 49.9 % w/w
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Figure S1. Cell viability of Hela cell lines on different samples

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