Supporting information:

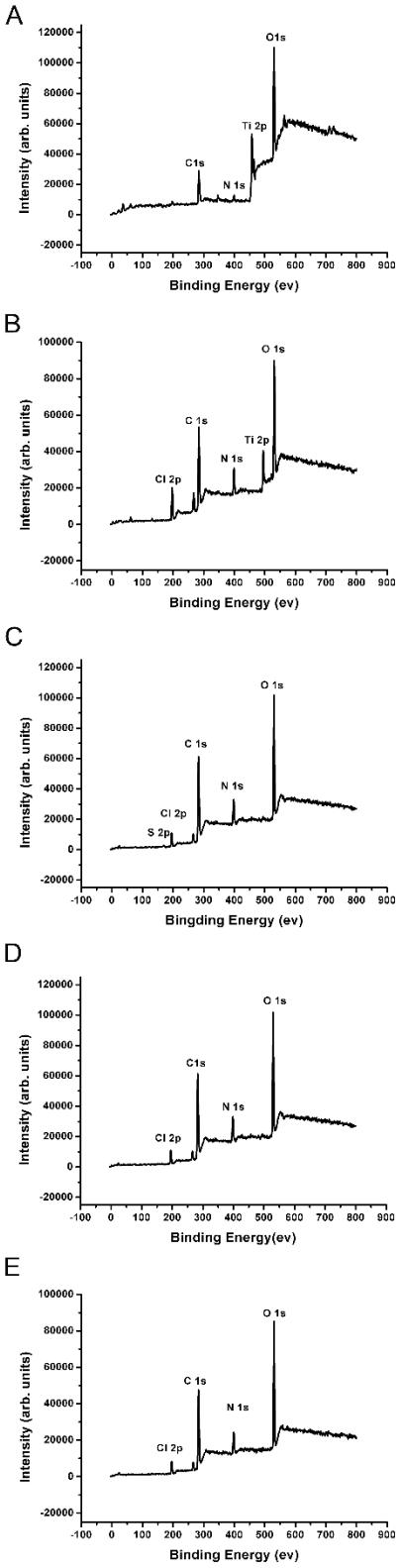

Figure S1. XPS spectra of pristine Ti and functionalized Ti substrates: (a) Pristine Ti; (b) DA-Ti; (c) PLL/Hep-Ti; (d) CH-Ti; (e) CH-MTX-Ti; The appearance of Cl2p peaks in the spectra was due to the remnant salt and Tris-HCl from the functionalization reaction systems.

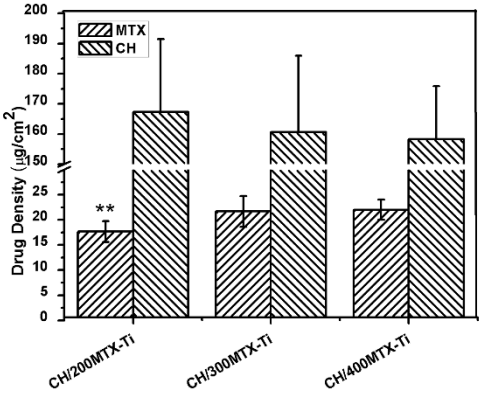

Figure S2. Quantitative measurements of the amount of MTX and CH loaded on unit area of different CH-MTX Ti surfaces. The functionalized Ti substrate were immersed into 1 ml of CH (1.5 mg/ml) and MTX (200, 300, 400 μg/ml) solution. The resultant substrates are termed CH/200MTX-Ti, CH/300MTX-Ti and CH/400MTX-Ti. The drug loading density of CH/MTX-Ti on the substrates was calculated by the change of concentration of the CH/MTX solution. ** denotes a significant difference when compared to the 400 μg/ml group ($p<0.01$) as determined by one way ANOVA. Results are represented by mean ± SD of 3 independent experiments.

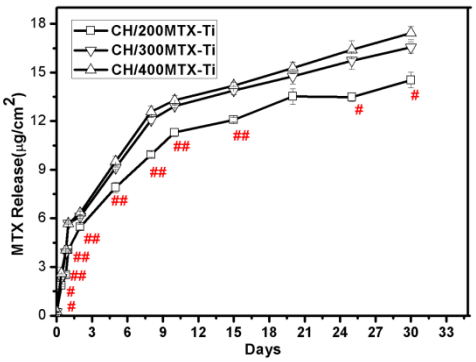

Figure S3. In vitro release of MTX from CH/200MTX-Ti, CH/300MTX-Ti and CH/400MTX-Ti at 37℃. The data represent mean ± S.D. (n=3). Symbol denotes a significant difference when compared to substrates modified with CH/MTX400-Ti group at the same time point as determined by one way ANOVA. #, $p<0.05$; ##, $p<0.01$.

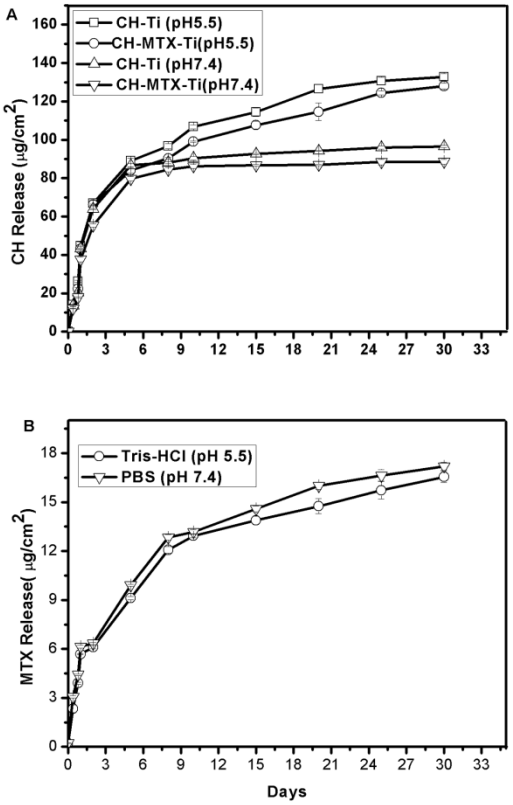

Figure S4. In vitro release of CH from CH-Ti and CH-MTX-Ti substrates in buffer at pH 5.5 and 7.4 (A) and in vitro release of MTX from CH-MTX-Ti substrates in buffer at pH 5.5 and 7.4 (B) at 37℃. The data represent means±S.D. (n=3).

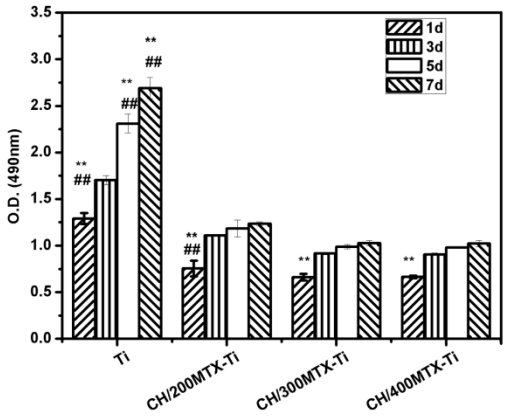

Figure S5. MTT reduction activity of GCTs cultured on differently functionalized Ti substrates for 1, 3 and 7 days. Symbol denotes significant differences as determined by one way ANOVA. One symbol, $p<0.05$; 2 symbols, $p<0.01$. #, compared to substrates modified with CH/MTX400-Ti group on the same day. *, compared to the same substrates on Day 3. Results are represented by mean ± SD of 3 independent experiments.