Figures Legends

Figure 1. XRD of Imatinib (drug), FericipXT tablet (iron supplement) used for coating, rutile TiO_2 NPs (T), FericipXT-coated rutile TiO_2 NPs in the 1:1 ratio (F), PEGylated FericipXT-coated rutile TiO_2 NPs (P), Imatinib-loaded TiO_2 NPs (TD), Imatinib-loaded FericipXT-coated rutile TiO_2 NPs (FD) and Imatinib-loaded PEGylated FericipXT-coated rutile TiO_2 NPs (PD) (*from bottom pattern to the top*).

Figure 2. The FTIR spectra of Imatinib, FericipXT, T, F, P, TD, FD and PD.

Figure 3. Calibration curve obtained for Imatinib under pH (a) 4.4, (b) 7.4 and (c) 9.0.

Figure 4. The UV-Visible absorption spectrum obtained for the drug D, TD, FD and PD at pH (a) 4.4, (b) 7.4 and (c) 9.0.

Figure 5. The HR-TEM images of (a) T, (b) F, (c) P, (d) D, (e) TD, (f) FD and (g) PD.

Figure 6. The SAED pattern obtained for (a) T, (b) F, (c) P, (d) D (e) TD, (f) FD and (g) PD

Figure 7. (a) DLS size distribution plots obtained for T, F, P, TD, FD and PD and (b) Zeta Potential plots of T, F, P, TD, FD and PD.

Figure 8. The VSM curves obtained for (a) T, (b) FericipXT, F and FD, (c) P and PD and (d) FericipXT, FD and PD.

Figure 9. The Imatinib release profiles of T, F and P at pH 4.4.

Figure 10. The Imatinib release profiles of TD, FD and PD at pH 7.4.

Figure 11. The Imatinib release profiles of TD, FD and PD at pH 9.0.

Figure 12. (a) The bar-chart representation of the % hemolysis obtained in all the five samples in comparison with the positive and negative control and (b) the images of all the five blood samples containing the NPs in the respective concentrations, positive control and negative control obtained after centrifugation.

Tables

Table 1. The symbols used in this report and their meanings.

Symbol	Meaning
D	Imatinib
FXT	FericipXT (Iron Supplement)
T	Rutile TiO_2 NPs
F	FericipXT@ rutile-TiO_2 NPs (Iron tablet-coated rutile TiO_2 NPs)
P	PEGylated FericipXT@ rutile-TiO_2 NPs (PEG coating onto the iron tablet-coated TiO_2 NPs)
TD	Imatinib (Drug) loaded onto rutile-TiO_2 NPs
FD	Imatinib (Drug) loaded onto FericipXT@rutile-TiO_2 NPs
PD	Imatinib (Drug) loaded onto PEGylated FericipXT@rutile-TiO_2 NPs

Table 2. Different phases obtained after XRD analysis of FericipXT-coated rutile TiO_2 NPs with 1:1 core:shell ratio and their quantification.

JCPDS Pattern	Compound Name	Quantification	Crystal System
01-084-0311	Iron (III) oxide- alpha (Fe_2O_3)	8.9%	Rhombohedral
01-089-2428	Dioxygen-alpha (O_2)	17.8%	Monoclinic
01-089-0599	(Hematite) Iron (III) oxide-alpha (Fe_2O_3)	5%	Rhombohedral
01-076-1821	Iron (III) oxide-beta (Fe_2O_3)	24.8%	Hexagonal
01-086-1350	Iron Oxide ($Fe_{2.937}O_4$)	1%	Cubic
01-080-2186	Iron oxide-gamma ($Fe_{21.34}O_{32}$)	19.8%	Tetragonal
01-089-5894	(Maghemite Q Iron Oxide) Iron (III) oxide-gamma ($Fe_{1.966}O_{2.963}$)	22.7%	Tetragonal

Table 3. A description of wavenumbers relating to the FTIR spectra and their corresponding functional groups for all the samples.

S.No.	Wavenumber (cm^{-1})	Sample ID (in sequence of the wavenumbers mentioned)	Functional Groups
1	3550.83, 3546.26	D, PD	Stretching vibration of the hydroxyl group O-H
2	3475.74, 3463.61, 3463.83, 3462.55, 3470.46	D, T, P, TD, PD	Dimeric OH stretch
3	3414.83, 3429.14, 3425.40, 3434.15, 3414.61, 3431.66, 3416.92, 3414.12	D, FXT, T, F, P, TD, FD, PD	H-bonded OH stretch
4	3237.05, 3238.17	D, PD	Normal ‘‘polymeric’’ OH stretch
5	2920.87, 2917.30, 2915.98	D, FD, PD	Methylene C-H asym./sym. stretch
6	2879.65	FD	Methylene C-H asym./sym. stretch
7	1776.19	FD	C=O stretching
8	1617.31, 1638.36; 1622.01,1637.07; 1619.09, 1637.31; 1617.73, 1637.72;	D, TD, FD, PD	C=C stretching
9	1620.90, 1636.22, 1634.89, 1636.59	FXT, T, F, P	C=C stretching
10	1466.85, 1452.94, 1449.61, 1462.97, 1452.30	D, F, TD, FD, PD	C-H bending
11	1420.13, 1425.66, 1418.94	D, P, TD	C-H bending
12	1386.88, 1381.78, 1382.41, 1381.65, 1383.43, 1383.00, 1383.85	D, FXT, T, P, TD, FD, PD	C-H bending

13	1351.99	FD	O-H bending
14	1312.90	D	O-H bending
15	1282.75, 1297.97, 1288.37	D, FD, PD	C-O stretching
16	1250.80	FD	C-O stretching
17	1223.37	D	C-O stretching
18	1167.39, 1157.86, 1156.93	D, P, TD	Hydrate
19	1117.03, 1122.51, 1124.66, 1109.98, 1109.59, 1110.41	FXT, T, F, P, TD, PD	Secondary or tertiary alcohol C-O stretching
20	1035.04, 1015.35, 1029.75, 1056.21, 1029.96, 1097.75, 1058.29	D, F, P, TD, FD, PD	C-N stretching
21	903.50, 916.42, 945.98	F, P, FD	C–H (Bending of aromatic hydrocarbons)
22	803.72, 876.80, 878.54, 897.28	D, FXT, F, PD	C–H (out of plane bending of aromatic hydrocarbons)
23	753.96	D	C–H (Bending of aromatic hydrocarbons)
24	620.10, 617.44, 613.00, 619.31, 613.76, 621.13, 617.87, 620.01	D, FXT, T, F, P, TD, FD, PD	Ti-O-Ti bridging stretching mode, Fe-O in case of FXT
25	525.57, 507.80	TD, FD	Bending vibrations of O-Ti-O
26	480.34, 488.83, 476.60, 480.83	D, FXT, FD, PD	O–Ti–O bonding

Table 4. Hydrodynamic diameter and Polydispersity Index of T, F, P, TD, FD and PD.

S.No.	Symbol	Hydrodynamic Diameter (nm)	Polydispersity
1	T	466.0 nm	0.005
2	F	449.5 nm	0.227
3	P	642.2 nm	0.277
4	TD	394.5 nm	0.252
5	FD	437.4 nm	0.198
6	PD	557.2 nm	0.241

Table 5. The terminologies used for studying drug release from different samples under different pH levels.

pH → Samples ↓	pH 4.4	pH 7.4	pH 9.0
TD	T4	T7	T9
FD	F4	F7	F9
PD	P4	P7	P9

Table 6. Representation of R^2 values obtained after fitting the data against different models.

Samples >>	**F4**	**T4**	**P4**	**F7**	**T7**	**P7**	**F9**	**T9**	**P9**
pH	4.4			7.4			9.0		
Zero Order Model	0.7129	0.7323	0.9807	0.8166	0.8692	0.7345	0.7475	0.2305	0.3384
First Order Model	0.9094	0.9138	0.9655	0.8388	0.8910	0.7647	0.7590	0.2617	0.3770
Higuchi Model	0.9178	0.9178	0.9178	0.9178	0.9178	0.9178	0.9178	0.9178	0.9178
Hixson-Crowell Model	0.8763	0.8887	0.9894	0.8316	0.8840	0.7548	0.7552	0.2512	0.3639
Weibull Model	0.9533	0.9464	0.9924	0.9682	0.9777	0.9752	0.9805	0.8467	0.8520
Noyes-Whitney Model	0.9094	0.9138	0.9655	0.8388	0.8910	0.7647	0.7590	0.2617	0.3770
Korsmeyer-Peppas	0.9895	0.9950	0.9933	0.9866	0.9887	0.9932	0.9926	0.9953	0.9662
Peppas-Sahlin	**0.9895**	**0.9950**	**0.9933**	**0.9876**	**0.9894**	**0.9939**	**0.9928**	**0.9953**	**0.9662**
2nd Degree Polynomial	0.9180	0.9570	0.9920	0.8520	0.9800	0.9340	0.8350	0.7620	0.8630