Bioactive Chitosan Scaffolds Reinforced with Hydroxyapatite and Nickel Tungstate for Bone Tissue Engineering

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SUPPORTING INFORMATION

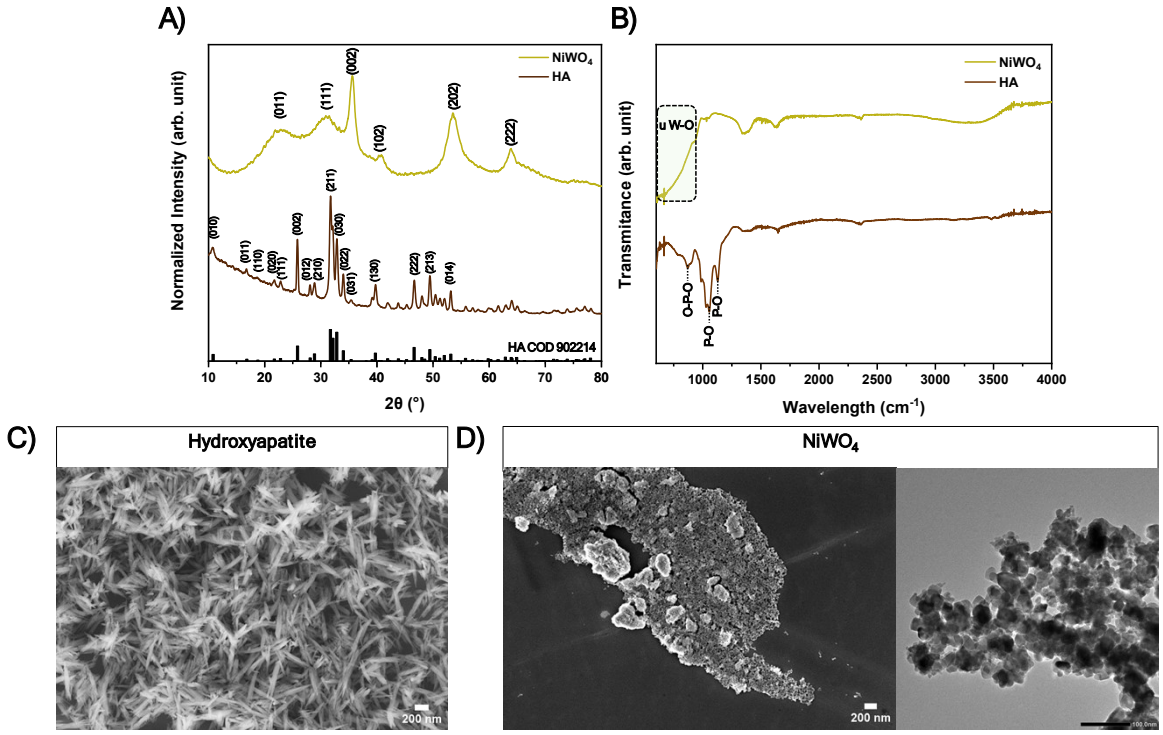

Figure S1. Characterization of hydroxyapatite and $NiWO_4$ by **A)** XRD and **B)** FTIR. SEM images of **C)** hydroxyapatite and **B)** $NiWO_4$.

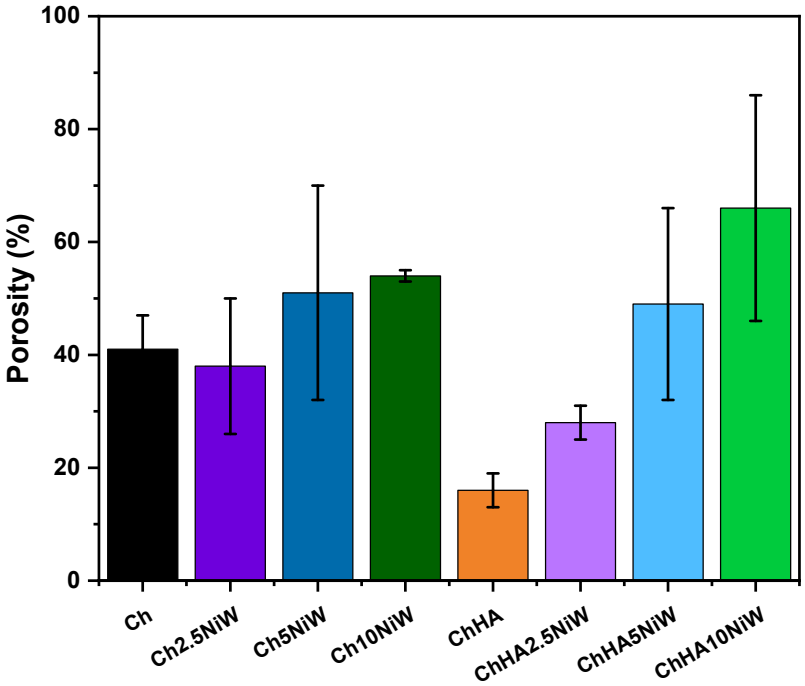

Figure S2. Porosity of the scaffolds obtained by immersion in ethanol.

Table S1. Semi-quantitative elemental analysis obtained by EDS.

Sample	C (wt%)	N (wt%)	O (wt%)	Ni (wt%)	W (wt%)	Ca (wt%)	P (wt%)
Ch	36.4	5.9	57.7	–	–	–	–
Ch2.5NiW	36.5	7.6	53.0	0.4	2.5	–	–
Ch5NiW	35.2	6.5	53.8	0.8	3.7	–	–
Ch10NiW	32.9	6.5	52.6	1.9	6.0	–	–
ChHA	34.2	6.2	53.4	–	–	4.1	2.1
ChHA2.5NiW	33.2	7.2	52.3	0.4	1.2	4.0	1.7
ChHA5NiW	33.3	5.9	50.3	1.1	3.6	4.2	1.6
ChHA10NiW	30.9	6.2	48.3	1.8	6.9	4.0	1.7

Table S2. Quantitative elemental analysis obtained by XRF.

Sample	Ca (wt.%)	P (wt.%)	Ni (wt.%)	W (wt.%)
Ch	<LOD	<LOD	<LOD	<LOD
Ch2.5NiW	<LOD	<LOD	0.50	1.45
Ch5NiW	<LOD	<LOD	0.93	3.10
Ch10NiW	<LOD	<LOD	1.86	6.20
ChHA	4.25	1.86	<LOD	<LOD
ChHA2.5NiW	4.00	1.95	0.47	1.52
ChHA5NiW	4.18	1.87	1.00	2.92
ChHA10NiW	3.98	1.99	1.95	5.85

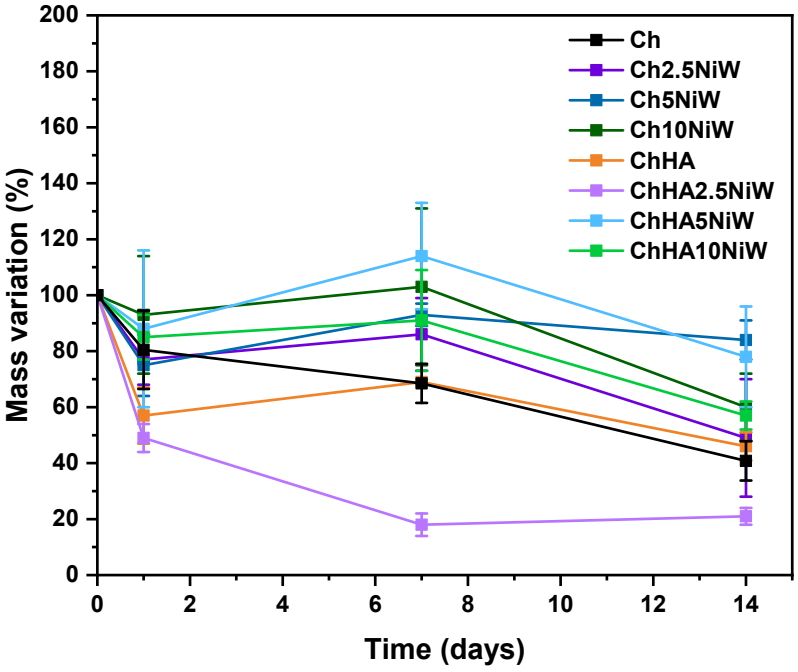

Figure S3. Relative mass of the scaffolds after 1, 7 and 14 days immersed in SFB.

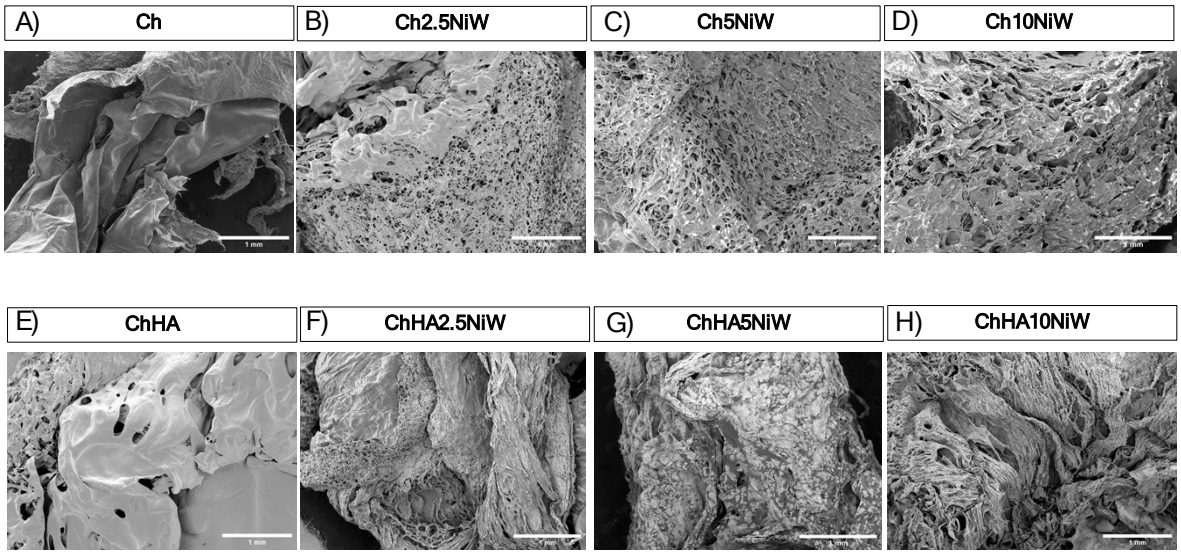

Figure S4. Morphological analysis of scaffolds by SEM after 14 days immersed in SFB. **A)** Ch, **B)** Ch2.5NiW, **C)** Ch5NiW, **D)** Ch10NiW, **E)** ChHA, **F)** ChHA2.5NiW, **G)** ChHA5NiW, and **H)** ChHA10NiW.

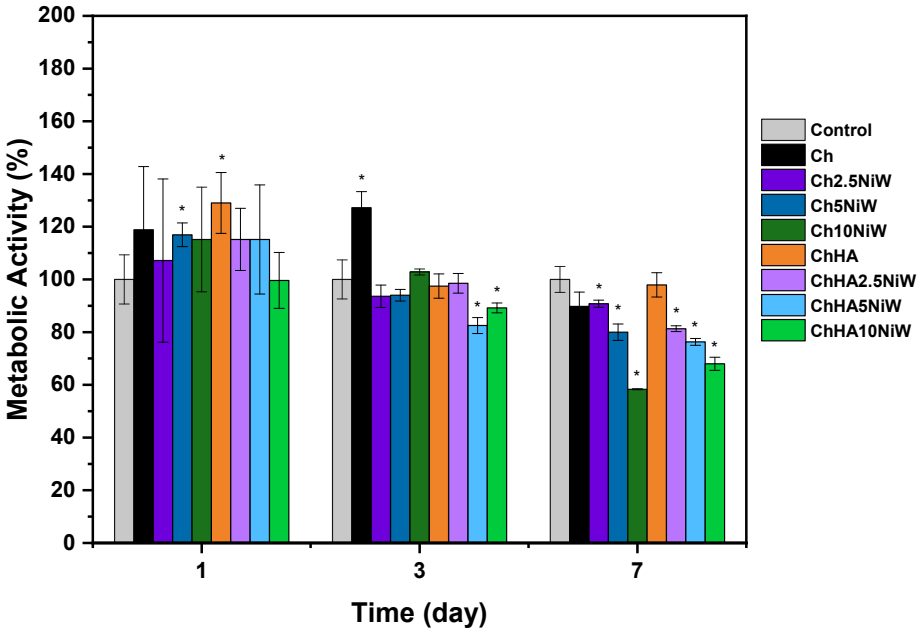

Figure S5. Metabolic activity of L929 cells using rezausurine by direct contact. Results are presented as mean and standard deviation (n = 9). Statistical analysis was performed using one-way ANOVA followed by a post-hoc test, with differences considered statistically significant when *$p < 0.05$.