Bioactive glass doped with noble metal nanoparticles for bone regeneration: *in-vitro* kinetics and proliferative impact on human bone cell line

Amany A. Mostafa ^{a,b*}, Mayyada M.H. El-Sayed ^{c,*}, Ahmed N. Emam ^{a,b}, Ahmed A. Abd-Rabou ^{d,e}, Reham M. Dawood ^f and Hassane Oudadesse ^g

^a Refractories, Ceramics and Building Materials Department (Biomaterials group), National Research Centre (NRC), El Bohouth St., Dokki, 12622 Cairo, Egypt,

^bNanomedicine & Tissue Engineering Lab., Medical Research Center of Excellence (MRCE), NRC, Egypt

^c Chemistry Department, School of Sciences and Engineering, American University in Cairo, AUC Avenue, New Cairo, 11835, Egypt

^d Hormones Department, Medical Research Division, National Research Centre, Dokki, Giza, Egypt

^e Stem Cell Lab, Center of Excellence for Advanced Sciences, National Research Centre, Dokki, Giza, Egypt

^f Department of Microbial Biotechnology, Genetic Engineering Division, National Research Centre, 33 EL Bohouth Street Dokki, Giza, Egypt, 12622

^g Universite de Rennes 1, UMR CNRS 6226, 263 av. du general Leclerc, 35042 Rennes Cedex, France

*Corresponding author: amani.mostafa@gmail.com, aa.monem@nrc.sci.eg Mayyada@aucegypt.edu, Mayyadas@gmail.com

Supplementary information



Fig. S1 Normalized absorption spectra for the as-prepared Gold (Au, red line) and (b) Silver (Ag, black line) nanoparticles.



Fig. S2 TEM micrographs for both of as-prepared (a) silver (Ag) and (b) gold (Au) nanoparticles. (Scale bar 100 nm).



Fig. S3 Linear kinetic plots of the pseudo-second-order kinetic model pertaining to the concentration profiles for the release of Ca (A) and Si (B) from BG-Ag after soaking in SBF.



Fig. S4 Linear kinetic plots of the pseudo-second-order kinetic model pertaining to the concentration profiles for the release of Ca (A) and Si (B) from BG-Au after soaking in SBF.

Sample	BC	BG-Ag1	BG-Ag2	RG-Au1	RG-Au?
Dose (µg/ml)	ЪU	DOMEI	D G- <u>M</u> <u>5</u> ²	DG-Mui	DO -7102
0	100	100	100	100	100
2	94.94311	124.511141	137.816245	121.852326	126.496391
4	114.243574	133.833561	119.707057	121.937687	123.55763
6	141.255794	131.969077	146.915224	109.773794	131.120619
8	128.402866	136.061846	136.706613	126.547162	102.121959
10	128.613569	117.371533	116.466933	129.236022	128.354726

Table S1. Cellular proliferation percentage (%) upon treatment of osteosarcoma MG-63 cell with different doses of BG, and Ag or Au doped BG