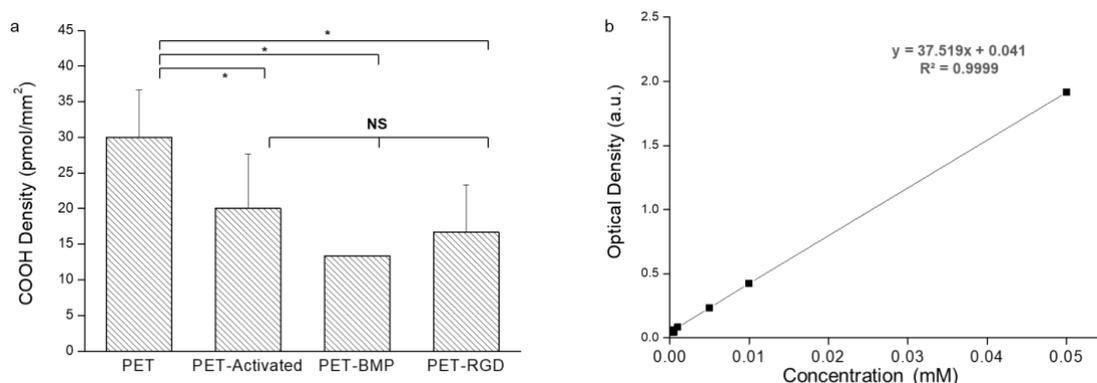
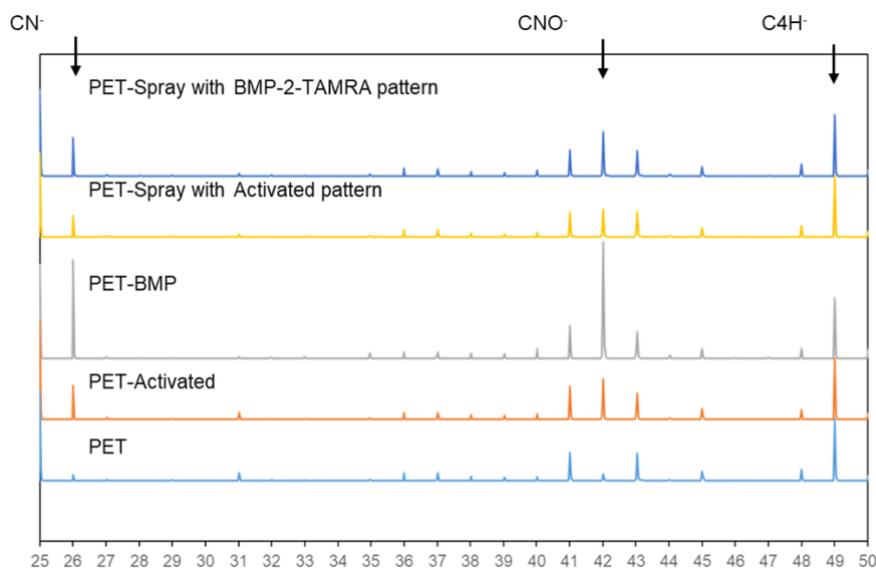


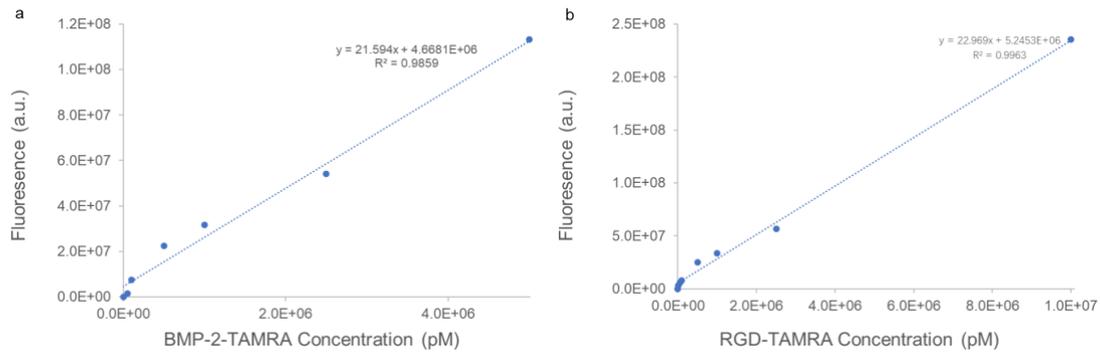
Supplementary



Supplementary Figure S1 a) [COOH] densities obtained by toluidine blue assay, b) Calibration curve of carboxyl group density plotted against absorbance at 633 nm



Supplementary Figure S2 The high mass resolution spectra of TOF-SIMS obtained from PET, PET-Activated, PET-BMP, PET-Spray1 with Activated pattern, PET-Spray1 with BMP-2-TAMRA pattern.



Supplementary Figure S3. Fluorescence calibration curve of BMP-2-TAMRA (a) and RGD-TAMRA (b). The fluorescence intensity is expressed as a function of the peptide density.

	HMSC on glass in normal medium	HMSC on glass in osteogenic medium	OB on glass	HMSC on PET-MX1 in normal medium	HMSC on PET-MX2 in normal medium	HMSC on PET-Spray2 in normal medium	HMSC on PET-Spray3 in normal medium
a OPN							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in normal medium				*			
HMSC on PET-MX2 in normal medium					*		
HMSC on PET-Spray2 in normal medium						*	
HMSC on PET-Spray3 in normal medium							*
b E11							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in normal medium				*			
HMSC on PET-MX2 in normal medium					*		
HMSC on PET-Spray2 in normal medium						*	
HMSC on PET-Spray3 in normal medium							*
c SOST							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in normal medium				*			
HMSC on PET-MX2 in normal medium					*		
HMSC on PET-Spray2 in normal medium						*	
HMSC on PET-Spray3 in normal medium							*
d DMP1							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in normal medium				*			
HMSC on PET-MX2 in normal medium					*		
HMSC on PET-Spray2 in normal medium						*	
HMSC on PET-Spray3 in normal medium							*
e OPN							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in osteogenic medium				*			
HMSC on PET-MX2 in osteogenic medium					*		
HMSC on PET-Spray2 in osteogenic medium						*	
HMSC on PET-Spray3 in osteogenic medium							*
f E11							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in osteogenic medium				*			
HMSC on PET-MX2 in osteogenic medium					*		
HMSC on PET-Spray2 in osteogenic medium						*	
HMSC on PET-Spray3 in osteogenic medium							*
g DMP1							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in osteogenic medium				*			
HMSC on PET-MX2 in osteogenic medium					*		
HMSC on PET-Spray2 in osteogenic medium						*	
HMSC on PET-Spray3 in osteogenic medium							*
h SOST							
HMSC on glass in normal medium	ns						
HMSC on glass in osteogenic medium		*					
OB on glass			*				
HMSC on PET-MX1 in osteogenic medium				*			
HMSC on PET-MX2 in osteogenic medium					*		
HMSC on PET-Spray2 in osteogenic medium						*	
HMSC on PET-Spray3 in osteogenic medium							*

Supplementary Figure S4. Statistical analysis of several differentiation markers a) OPN, b) E11, c) DMP1, d) SOST, after 2 w; and e) OPN, f) E11, g) DMP1, h) SOST, after 3 w. The statistical analysis was done by one-way analysis of variance (ANOVA) and Tukey's test for multiple comparisons. P values are represented as following * 0.05, ns represented the mean difference was not significant at the 0.05 level.

Cell morphology	Cell aspect ratio	Cell morphology								
		OB in glass	180EC in glass in osteogenic medium	180EC in glass in normal medium	180EC in P4Y 850 in normal medium	180EC in P4Y 850P in normal medium	180EC in P4Y 850Y in normal medium	180EC in P4Y 850Z in normal medium	180EC in P4Y 850W in normal medium	180EC in P4Y 850V in normal medium
a	OB in glass	-	-	-	-	-	-	-	-	-
	180EC in glass in osteogenic medium	*	-	-	-	-	-	-	-	-
	180EC in glass in normal medium	-	-	*	-	-	-	-	-	-
	180EC in P4Y 850 in normal medium	-	-	-	*	-	-	-	-	-
	180EC in P4Y 850P in normal medium	-	-	-	-	*	-	-	-	-
	180EC in P4Y 850Y in normal medium	-	-	-	-	-	*	-	-	-
b	OB in glass	-	-	-	-	-	-	-	-	-
	180EC in glass in osteogenic medium	*	-	-	-	-	-	-	-	-
	180EC in glass in normal medium	-	-	-	-	-	-	-	-	-
	180EC in P4Y 850 in normal medium	-	-	-	*	-	-	-	-	-
	180EC in P4Y 850P in normal medium	-	-	-	-	*	-	-	-	-
	180EC in P4Y 850Y in normal medium	-	-	-	-	-	*	-	-	-
c	OB in glass	-	-	-	-	-	-	-	-	-
	180EC in glass in osteogenic medium	*	-	-	-	-	-	-	-	-
	180EC in glass in normal medium	-	-	-	-	-	-	-	-	-
	180EC in P4Y 850 in normal medium	-	-	-	*	-	-	-	-	-
	180EC in P4Y 850P in normal medium	-	-	-	-	*	-	-	-	-
	180EC in P4Y 850Y in normal medium	-	-	-	-	-	*	-	-	-
d	OB in glass	-	-	-	-	-	-	-	-	-
	180EC in glass in osteogenic medium	*	-	-	-	-	-	-	-	-
	180EC in glass in normal medium	-	-	-	-	-	-	-	-	-
	180EC in P4Y 850 in normal medium	-	-	-	*	-	-	-	-	-
	180EC in P4Y 850P in normal medium	-	-	-	-	*	-	-	-	-
	180EC in P4Y 850Y in normal medium	-	-	-	-	-	*	-	-	-
e	OB in glass	-	-	-	-	-	-	-	-	-
	180EC in glass in osteogenic medium	*	-	-	-	-	-	-	-	-
	180EC in glass in normal medium	-	-	-	-	-	-	-	-	-
	180EC in P4Y 850 in osteogenic medium	-	-	-	*	-	-	-	-	-
	180EC in P4Y 850P in osteogenic medium	-	-	-	-	*	-	-	-	-
	180EC in P4Y 850Y in osteogenic medium	-	-	-	-	-	*	-	-	-
f	OB in glass	-	-	-	-	-	-	-	-	-
	180EC in glass in osteogenic medium	*	-	-	-	-	-	-	-	-
	180EC in glass in normal medium	-	-	-	-	-	-	-	-	-
	180EC in P4Y 850 in osteogenic medium	-	-	-	*	-	-	-	-	-
	180EC in P4Y 850P in osteogenic medium	-	-	-	-	*	-	-	-	-
	180EC in P4Y 850Y in osteogenic medium	-	-	-	-	-	*	-	-	-

Supplementary Figure S5. Statistical analysis of several cell morphology a) aspect ratio, b) circularity, c) anisotropy, after 2 w; and d) aspect ratio, e) circularity, f) anisotropy, after 3 w. The statistical analysis was done by one-way analysis of variance (ANOVA) and Tukey's test for multiple comparisons. P values are represented as following * 0.05, N represented the mean difference was not significant at the 0.05 level.