

# 9ZYWg'cZ'; c`X`BUbcdUfhjVW`GjnY`UbX': i bWjcbU'; fci d` on Adipogenesis of Mesenchymal Stem Cells

**Peter Su**

7\Y a]WU`UbX`6]c a c`YW i`Uf`9b [ ]bYYf]b [z` I b]jYfg]hm`cZ`7U`]Zc fb]Uz`6Yf`Y`Ym

**NNIN iREU Site: National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan**

NNIN iREU Principal Investigator: Dr. Guoping Chen, Tissue Regeneration Materials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Ibaraki, Japan

NNIN iREU Mentor: Dr. Jasmine Li, Tissue Regeneration Materials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Ibaraki, Japan

Contact: su.peter92@gmail.com, guoping.chen@nims.go.jp, li.jasmine@nims.go.jp

## Introduction:

Ogugpej { o cn" uvg o" egmu" \*OUEu+ ctg" gzvtg o gn{ " wughwn" kp" i gpgtcvkpi "c" o wnvkwf g"qh"egm"nkpgc i gu"hqt"vkuuwg"tg i gpgtcvkqp" cr rnkcevkqpu0"Vjg" o ketqgp xktqo gpv"qh"v jgug" OUEu"ku"etkvecn" kp"tg i wncvki "v jgkt"fkhhgtgpvkcvkqp."kpenwfkpi "uqndng"ncevqtu"v jcv" dkp"vq" xctkqu"egm"tgegrvqtu0" Ogcp y jkng." i qnf"pcpqrctvkengu" \*CwPRu+"jcxg"ujqyp" i tgecv"rqvqpkcn"kp"dknqi i kecn"tgugcte j"fwg" vq"v jgkt"cdknkv{ "vq"kpvtcev" ykvj" dkq o qngewngu0"Rtgxkqu" y qtm" jcu"ujqyp" CwPRu"qh" fkhgtgpv"uk|gu"vq" chhgev"v jg" tg i wncvki" qh"cfkrqi gpke"\*hcv"egm+" fkhgtgpvkcvkqp"qh" OUEu"]3\_0"Vjwu."v jg" qdIgevkxg"qh"v jku"tgugcte j" ycu"vq"gzrcpf"qp"rtgxkqu"tgugcte j"d{" gzc o kpkpi "v jg"ghhgevu"qh"CwPRu"qh"v y q" fkhgtgpv"uk|gu"\*42"cpf" ;2"po+"cpf"hwpevkqpcn" i tqwru"\*ekvtcvg"cpf"€/ o gtecrvqrtrkqpkc" cekf"\*EQQJ+" qp" OUE" i tqyvj." o qtrjqnqi {" cpf" fg itgg" qh" cfkrqi gpke" fkhgtgpvkcvkqp)

## Experimental Procedure:

I qnf"pcpqrctvkengu" ygtg"u{pvjguk|gf" xkc"v jg"ekvtcvg"tgfwvkqp" o gvjqf0" Vtkuqfkwo" ekvtcvg" ycu" cffgf"vq" c" 322" oN" uqnwvkqp" qh"204; " o O" vgtcejqtcwtke" cekf"kp" c" tgEwz"ugvwr." jgcvgf"cv" 332ÅE." cpf"uvkttgf"cv"922" tr o" hqt"v jktv{ " o kpwvgu0" CwPRu" qh" fkc"ogvgtu"42"po" cpf"; 2"po" ygtg"rtqfwegf"d{" xct{kp i"ekvtcvg" eqpegpvtcvkqpu" ]4\_0" Chvgt"u{pvjguku." v jg" CwPRu" ygtg" rwtk f g" xkc"egpvtkhwi cvkqp0"Vjgp."v jg{" ygtg"ejctcevgtk|gf" hqt"uk|g" xkc" f{pc o ke" nki jv" uecvgtkpi" \*FNU+" cpf" wnvtxkqngv/xkukdng" nki jv" \*WX/xku+"urgetvqueqr {. ejctig"cpf"uvcdknkv{ " xkc" |gvc" rqvqpkcn" o gcuwtg o gpvu." cpf" o qtrjqnqi {" wukpi" uecppkpi" gngvqtq" o ketqueqr {" \*UGO+0" Hkpcnm {"vq"hwpevkqpcn|g"v jg" CwPRu" ykvj" €/ o gtecrvqrtrkqpkc" cekf." c" nki cpf/gzejcpi g" tgevkqp" ycu" r gthqt o g"cv" r J "33"kp" fctm"eqpfkvkqpu" hqt"v y gpv{/hqt" j qwtu0" Vjgug" CwPRu" ygtg"v jgp"ejctcevgtk|gf"cu" y gnm)

Figure 1: SEM images of the AuNPs (platinum-coated) showing morphology and size distribution.

OUEu" ygtg"uggfgf"kp" hqt"46/y gnm" rncvgu"cv" c" fgpukv{ "qh"7#X# 32<sup>3n</sup> egmule o<sup>40</sup> Vjtg" dkqnqikecn" tgrnkcevgu" qh" gcej" eqpfvkqp" ygtg" wugf0" Chvgt" qpg" fc {" qh" ewnvwtg." 3" o O" qh" CwPRu" ygtg" cffgf" kp." cnqpi" ykvj" cfkrqigpguku" kpfwevkqp" o gfk" hqt" v y q" rncvgu" \*v jg" qvjgt" v y q" rncvgu" ygtg" pgi cvkxg" eqpvtqnu+0" Ogfk" ycu"ejcpi g" ppeg" gxgt {"v jtg" fc {u0" Chvgt"ugxgp" fc {u." i tqyvj" cpf" o qtrjqnqi {" ygtg" gzc o kpgf" xkc" qrvkecn" o ketqueqr {" cpf" cfkrqigpke" fkhgtgpvkcvkqp" ycu" swcpvk f g" xkc" cp" cnmenkpg" r jqr jvcvug" \*CNR+"cevkxkv {" cuuc {" cpf" cp" Qkn" Tgf" Q" uvckkpi" cuuc {0" CNR"cevkxkv {" ycu" o gcuwtg f" wukpi "v jg" Cpcurge Ugpuqn {vg<sup>®</sup> mkv0" Qkn" Tgf" Q" uvckkpi" ycu" ectk g f" qwv" d {" f zkp i "v jgp" uvckkpi" v jg" egmu" y kvj" Qkn" Tgf" Q0" Egmu" ygtg" v jgp" k o ci g f" dghqts" v jg" qkn" ycu" gnwv g f" cpf" o gcuwtg f" hqt" cduqtdcpeg" cv" 722" po0" Egmu" ygtg" eqwpvgf" wukpi "c" jg o qe {vq o gvgt" w pfgt" cp" qrvkecn" o ketqueqr g)

## Results and Discussion:

Vcdng"3"uw o o ctk|gu"pcpqrctvkengu" u{pvjguku"cpf"ejctcevgtk|cvkqp0" \gvc"rqvqpkcnu" ygtg" dgnqy"/42" o X"ujqykpi"v jg" CwPRu"vq"dg" uvcdng." y jkng"uk|g"cpf" o qtrjqnqi {"qh"v jg" CwPR" \*Hki wtg"3+"wukpi" dqvj" jki j" cpf" hqy" eqpegpvtcvkqpu"qh"ekvtcvg" ycu" eqpukv gpv" y kvj" nkvgtcvwtg"]5\_0

Table 1: AuNP synthesis and characterization results.

