

Encapsulating Epigallocatechin-3-gallate (EGCG) in Chitosan Nanoparticles Influenced Multiple Genes Controlling Oncostatic Signaling Pathways in HepG2 cells

Sameh M. Shabana^{1*}, Mustafa Neamatallah², Muhamad M.A. Said², Azza I. Othman¹, Omar A. Ammar³, Maher A. Amer¹, Mohamed Amr El-Missiry¹

¹Zoology Department, Faculty of Science, Mansoura University, Mansoura, 35516, Egypt.

²Department of Medical Biochemistry and Molecular Biology, Faculty of Medicine, Mansoura University, Egypt.

³Basic Science Department, Delta University for Science and Technology, Gamasa, Egypt.

*** Corresponding author:**

Sameh M. Shabana

Address: Zoology Department, Faculty of Science, Mansoura University, Mansoura, 35516, Egypt. E-mail: sam7@mans.edu.eg

ORCID ID

Sameh M. Shabana: [0000-0002-8148-0979](https://orcid.org/0000-0002-8148-0979)

Mustafa Neamatallah: [0000-0003-2793-7357](https://orcid.org/0000-0003-2793-7357)

Muhamad M.A. Said: [0009-0003-9711-9883](https://orcid.org/0009-0003-9711-9883)

Azza I. Othman: [0000-0001-8624-1259](https://orcid.org/0000-0001-8624-1259)

Omar A. Ammar: [0000-0001-9377-6462](https://orcid.org/0000-0001-9377-6462)

Maher A. Amer: [0009-0002-5194-6915](https://orcid.org/0009-0002-5194-6915)

Mohamed Amr El-Missiry: [0000-0002-4566-0497](https://orcid.org/0000-0002-4566-0497)

Table of contents

Table S1	Primer sequences used in RT-qPCR experiments.
Figure S1	Chit-nanoEGCG characterization

Gene	Forward	Reverse
β-actin	5'-GTGGCCGAGGACTTTGATTG-3'	5'-GTGGGGTGGCTTTTAGGATG-3'
P53	5'-GTATTTGGATGACAGAAACACT-3'	5'-GTTACACATGTAGTTGTAGTGG-3'
Bax	5'-GAACTGGACAGTAACATGGAG-3'	5'-TTTGCTGGCAAAGTAGAAAAG-3'
Bcl-2	5'-ATTGTGGCCTTCTTTGAGTT-3'	5'-G TTCAGG TACTCAGTCATCC-3'
CD95	5'-AACTTCATGGAAAGAAAGAAGC-3'	5'-GCTTCTTTCTTTCCATGAAGTT-3'
SOX2	5'-GTGGGCCTGAAGAAACTATC-3'	5'-AGGGCTGTCCTGAATAAGCAG-3'
OCT4	5'-CAGCCTCTTGAGTAGCTGGG-3'	5'-GTCAGGAGTTCGAGACCAGC-3'
NANOG	5'-TCCTCCAGTCAATACCCATCAG-3'	5'-CAGCAGTCATGTGCTTTTCCT-3'
NOTCH1	5'-ACGAGAATGGAACTTGAGTTC-3'	5'-AACTCCGATAGTCCATAGCAAG-3'
CD44	5'-CCTCCCTCCGTCTTAGGTCA-3'	5'-GGTAGCAGGGATTCTGTCTGT-3'
CD133	5'-GGGAATGCCTACATCTGGAA-3'	5'-AATTTGCATGAAAGCACAAGG-3'
ABCG2	5'-TCAATCAAAGTGCTTCTTTTTTATG-3'	5'-TTGTGGAAGAATCACGTGGC-3'
mTOR	5'-TGAATTCAGCCAAGTTTAAGAG-3'	5'-TTCAATGCTGCATTTGTGTC-3'
RALA	5'-ATGAATTGGAAGTCAATGAAA-3'	5'-TCAGGACCATGATAAATGTAGG-3'
PI3K	5'-TCAGAGTTACTGTTTCAGAACA-3'	GTAACATTCTGAAGATCAAGACC
c-MET	CTGGTGTTGTCTCAATATCAAC	ATATCAGAGTCCCCACTAGTTA
BMI1	5'-TCCTTAACAGTCTCAGGTATCAAC-3'	5'-CCACAGTTTCCTCACATTTCCA-3'
Ezrin	5'-AAACTTGGCCTGCACAGC-3'	5'-TGGCTGAGGAGCTCATCC-3'

Table S1. Primer sequences used in RT-qPCR experiments.

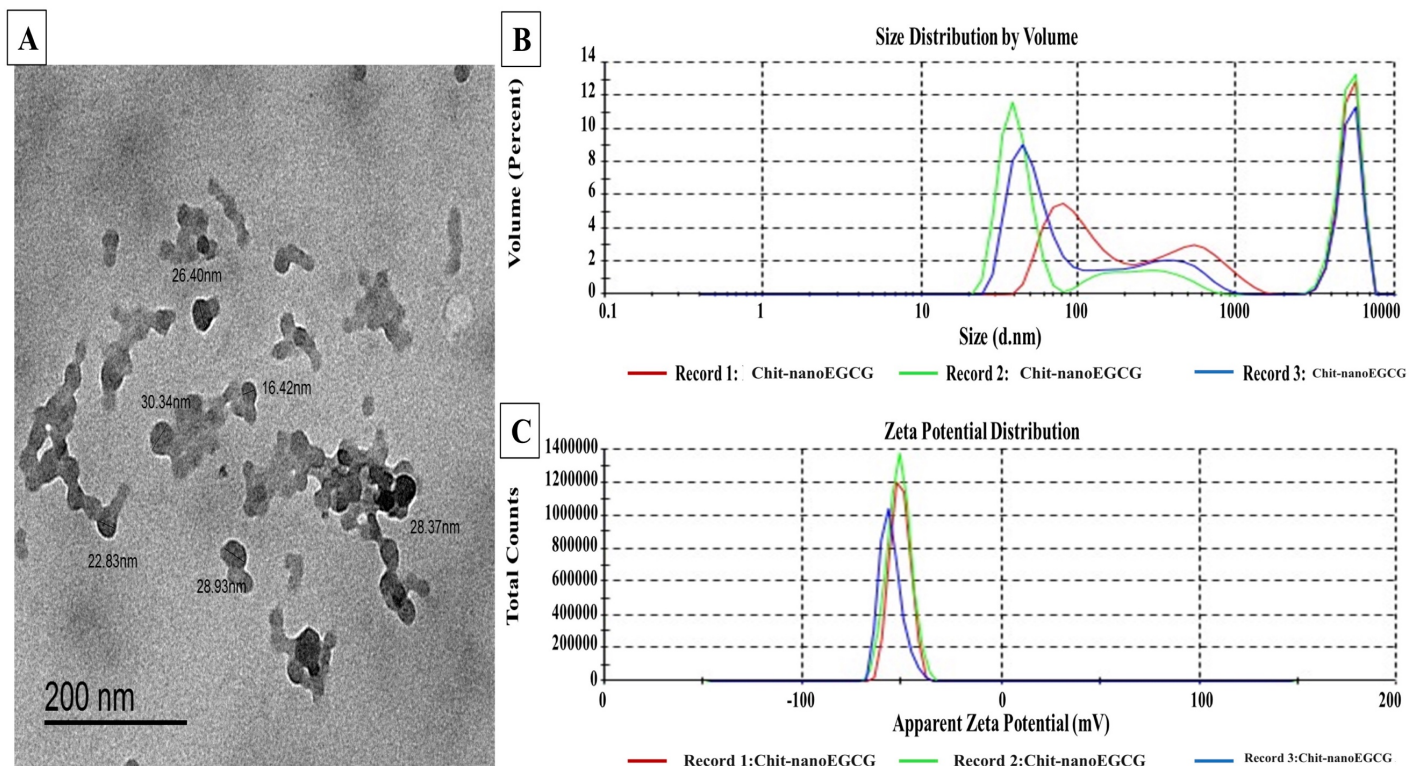


Figure S1. Characterization of chit-nanoEGCG; **A.** Electron micrograph showing the image of chit-nanoEGCG. The scale bar is 200 nm. **B.** Size distribution of chit-nanoEGCG. **c.** Zeta potential distribution of chit-nanoEGCG.