## **Supplementary Information**

Click Gold Quantum Dots Biosynthesis with Conjugation of Quercetin for Adenocarcinoma Exertion

Amol V. Pansare<sup>‡a,b</sup>, Priyanka V. Pansare<sup>‡c</sup>, Amol A. Shedge<sup>b</sup>, Shubham V. Pansare<sup>b</sup>, Vishwanath R. Patil<sup>b</sup>\*, Giovanni P. Terrasi <sup>a\*</sup> and Kamini J. Donde<sup>c\*</sup>

‡ Authors contributed equally

## Isolation of QRT and Synthesis of QRT-Au Complex

Ficus Arnottiana leaves ethanolic extract

Silica gel spread on glass plate uniformly in circular form

Addition of solidified (2.0 gm) ethanolic extract at the centre of silica gel circle

Mobile phase (1<sup>st</sup> petroleum ether, 2<sup>nd</sup> Chloroform)

Separation of colorless and dark yellow band occurs from centre of silica gel circle

Mobile phase (3<sup>rd</sup> Chloroform, 4<sup>th</sup> Acetone)

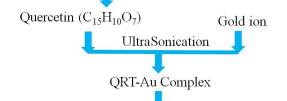
Colorless broad circle separated from the middle of ethanolic extract

Removed of colorless band by scratching from the centre of silica gel circle

Fill up the Silica gel : Alumina active basic (2:1 ratio) from scratched part of the silica gel circle

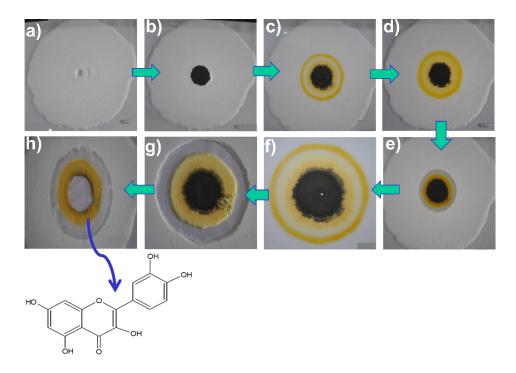
Mobile phase (5<sup>th</sup> Acetone, 6<sup>th</sup> MeOH)

Dark yellow color band circle separated from the middle of ethanolic extract



Invitro Anticancer activity against human leukemia K-562 and lung HOP-62 cancer cell line

Fig. S1 Flow sheet diagram of isolation of QRT and synthesis of QRT-AuQDS.



**Fig. S2 a)** Circularly spreaded silica gel on a glass plate. **b)** Ethanol extract of *F. Arnottiana* leaves were subjected at the centre of the CSSGLT. **c)**  $1^{st}$  mobile phase (petroleum ether), separation of dark yellow colored band occurred from centre of silica gel circle. **d)**  $2^{nd}$  mobile phase (petroleum ether and chloroform in 1:1 ratio), was used and dark yellow colored band was separated from centre of silica gel circle. **e)**  $3^{rd}$  mobile phase (Chloroform) was used to separate yellow colored broad circle from the middle of ethanol extract. f)  $4^{rth}$  mobile phase (chloroform and acetone in 2:1 ratio) was used to separate colorless broad circle from the middle of ethanol extract. **g)** Colorless part was scratched and picked up from the spreaded silica gel and the scratched area was filled up by aluminum oxide active base. **h)**  $5^{th}$  mobile phase (acetone and methanol in 2:1 ratio) was used and dark yellow colored circular band was separated from the spreaded from

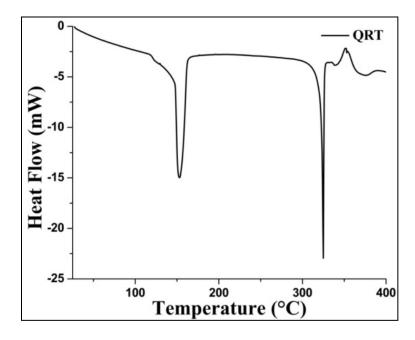


Fig. S3 DSC thermogram of QRT

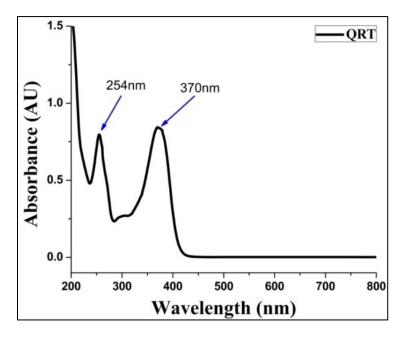


Fig. S4 UV-Vis absorption spectrum of QRT.

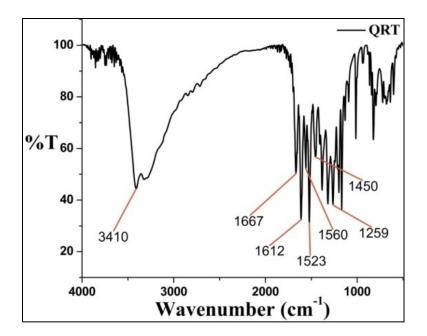


Fig. S5 FTIR spectrum of QRT.

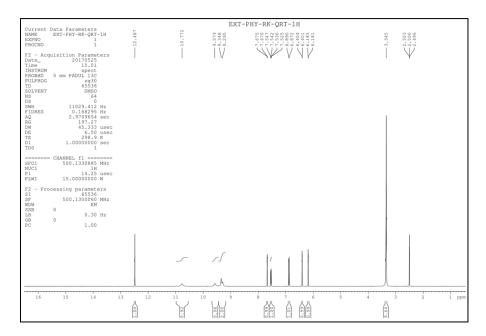


Fig. S6 <sup>1</sup>H NMR spectrum of QRT

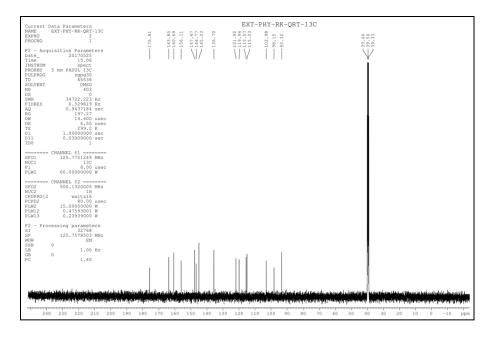


Fig. S7 <sup>13</sup>C NMR spectrum of QRT

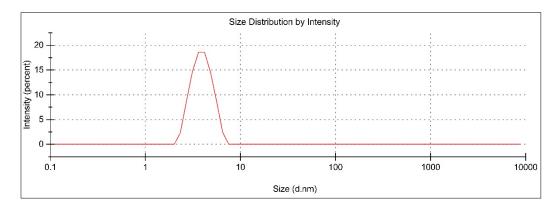


Fig.S8 DLS histogram of colloidal QRT-AuQDs (c) Zeta potential.

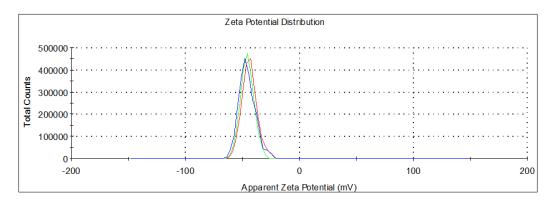


Fig.S9 Zeta potential of QRT-AuQDs

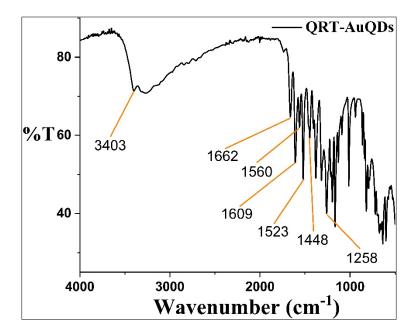


Fig. S10 FTIR spectrum of QRT-AuQDs.

| Human Lung Cancer Cell Line HOP-62 |                           |      |       |              |                |      |       |       |  |
|------------------------------------|---------------------------|------|-------|--------------|----------------|------|-------|-------|--|
|                                    | % Control Growth          |      |       |              |                |      |       |       |  |
|                                    | Molar Drug Concentrations |      |       |              |                |      |       |       |  |
|                                    | Experiment 1              |      |       | Experiment 2 |                |      |       |       |  |
| Conc.                              | 10-7                      | 10-6 | 10-5  | 10-4         | 10-7           | 10-6 | 10-5  | 10-4  |  |
| QRT                                | 72.6                      | 62.5 | -16.4 | -18.8        | 26.5           | 51.4 | -17.7 | -20.2 |  |
| QRT-AuQDs                          | 69.2                      | 58.2 | -26.0 | -26.8        | 18.2           | 40.1 | -20.9 | -22.6 |  |
| ADR                                | 84.7                      | 40.0 | -10.5 | -25.9        | -2.2           | 14.0 | -26.6 | -38.7 |  |
|                                    | Experiment 3              |      |       |              | Average Values |      |       |       |  |
| Conc.                              | 10-7                      | 10-6 | 10-5  | 10-4         | 10-7           | 10-6 | 10-5  | 10-4  |  |
| QRT                                | -30.3                     | 16.0 | -15.5 | -25.7        | 22.9           | 43.3 | -16.5 | -21.6 |  |
| QRT-AuQDs                          | -4.5                      | 48.4 | -28.7 | -28.8        | 27.8           | 48.9 | -25.2 | -26.1 |  |

 Table S1 Human Lung HOP-62 cancer cell line activity of QRT and QRT-AuQDs.

| ADR | -26.8 | -8.8 | -25.3 | -39.1 | 18.6 | 15.1 | -20.8 | -34.5 |  |
|-----|-------|------|-------|-------|------|------|-------|-------|--|
|-----|-------|------|-------|-------|------|------|-------|-------|--|

|           | Human Leukemia Cancer Cell Line K-562 |      |      |      |                |      |       |      |  |
|-----------|---------------------------------------|------|------|------|----------------|------|-------|------|--|
|           | % Control Growth                      |      |      |      |                |      |       |      |  |
|           | Molar Drug Concentrations             |      |      |      |                |      |       |      |  |
|           | Experiment 1                          |      |      |      | Experiment 2   |      |       |      |  |
| Conc.     | 10-7                                  | 10-6 | 10-5 | 10-4 | 10-7           | 10-6 | 10-5  | 10-4 |  |
| QRT       | 66.6                                  | 57.9 | 53.2 | 29.1 | 54.5           | 42.4 | 41.0  | 23.6 |  |
| QRT-AuQDs | 45.1                                  | 49.1 | 27.1 | 18.9 | 37.2           | 34.6 | -20.4 | 10.4 |  |
| ADR       | 26.5                                  | 17.6 | 13.1 | 18.0 | 27.9           | 27.3 | 19.2  | 34.9 |  |
|           | Experiment 3                          |      |      |      | Average Values |      |       |      |  |
| Conc.     | 10-7                                  | 10-6 | 10-5 | 10-4 | 10-7           | 10-6 | 10-5  | 10-4 |  |
| QRT       | 40.5                                  | 55.7 | 46.0 | 23.8 | 53.9           | 52.0 | 46.7  | 25.5 |  |
| QRT-AuQDs | 33.3                                  | 48.2 | 30.5 | 24.1 | 38.5           | 44.0 | 26.0  | 17.8 |  |
| ADR       | 34.5                                  | 47.1 | 34.6 | 16.8 | 29.6           | 30.6 | 22.3  | 23.3 |  |

 Table S2 Human Leukemia K-562 cancer cell line activity of QRT and QRT-AuQDs.