Fig. 1. Effect of quercetin on normal prostate epithelial cells viability by MTT assay

Each bar represents the mean ± SEM of three independent observations. Statistical analyses were performed using one-way ANOVA followed by Student’s–Newman–Keul’s (SNK) test for comparison between treatment values and control values using SPSS software. P < 0.05 was considered to be statistically significant.
Fig. 2. Effect of EGF (A) and EGF + Q (B) on the proliferation of PC3 cell line by MTT assay.

Each bar represents the mean ± SEM of six independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 3. Effect of EGF on p-EGFR/EGFR protein levels in PC-3 cell line at different time durations

<table>
<thead>
<tr>
<th>EGF(50ng/ml)</th>
<th>0h</th>
<th>10m</th>
<th>30m</th>
<th>1h</th>
<th>3h</th>
<th>6h</th>
<th>12h</th>
<th>24h</th>
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<tr>
<td>p-EGFR</td>
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<td>EGFR</td>
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<td>β-actin</td>
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p-EGFR (176 kDa)
EGFR (176 kDa)
β-Actin (42 kDa)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control vs other treatment groups.
Fig. 4. Effect of EGF on p-Akt (Thr 308)/p-Akt (Ser 473) protein levels in PC-3 cell line at different time durations

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups.
**Fig. 5.** Effect of quercetin on EGF-mediated changes in EGFR/p-EGFR protein levels in PC-3 cell line

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-EGFR (176 kDa)</td>
<td>L1 - Control</td>
<td>L2 - EGF (50 ng/ml)</td>
<td>L3 - EGF (50 ng/ml) + Quercetin (100 µM)</td>
</tr>
<tr>
<td>EGFR (176 kDa)</td>
<td>p-EGFR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>β-Actin (42 kDa)</td>
<td></td>
<td>EGFR (176 kDa)</td>
<td></td>
</tr>
</tbody>
</table>

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 6. Effect of quercetin on EGF-mediated changes in PI3K and PDK1 protein levels

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P < 0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 7. Effect of quercetin on EGF-mediated changes in mTOR/p-mTOR protein levels

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P < 0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 8. Effect of quercetin on EGF-mediated changes in Akt and p-Akt protein levels

L1- Control
L2- EGF (50ng/ml)
L3- EGF (50ng/ml) + Quercetin (100µM)
L4- Quercetin (100µM)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 9. Effect of quercetin on EGF-mediated changes in N-Ras and Raf protein levels

Each bar represents the mean ± SEM of three independent observations. "a" represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 10. Effect of quercetin on EGF-mediated changes in ERK1/2 protein levels

L1 - Control
L2 - EGF (50ng/ml)
L3 - EGF (50ng/ml) + Quercetin (100µM)
L4 - Quercetin (100µM)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 11. Effect of quercetin on EGF-mediated changes in p-GSK3β/ GSK3β and Cyclin D1 protein expressions

L1 - Control
L2 - EGF (50 ng/ml)
L3 - EGF (50 ng/ml) + Quercetin (100 µM)
L4 - Quercetin (100 µM)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 12. Effect of quercetin on EGF- mediated changes in FOXO protein expression

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 13. Effect of quercetin on EGF-mediated changes in NF-κB and PCNA protein expressions

L1- control;
L2- EGF (50ng/ml);
L3- EGF (50ng/ml) + Quercetin (100µM)
L4- Quercetin (100µM)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 14. Effect of quercetin on EGF-mediated changes in pro-apoptotic and anti-apoptotic protein expressions

L1- control
L2- EGF (50 ng/ml)
L3- EGF (50 ng/ml) + Quercetin (100 µM)
L4- Quercetin (100 µM)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig.15. Effect of quercetin on EGF-mediated changes on the protein expression of caspase-3 and its activity

![Image of protein expression with caspase-3 and beta-actin bands]

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig.16. Effect of EGF and quercetin on apoptosis of PC-3 cells by Acridine orange/ethidium bromide (AO/Etbr) dual staining.

A) Control

B) EGF (50ng/ml)

C) EGF+Q

D) Quercetin (100µM)

a-Viable cells; b-Early apoptotic cells; c- Late apoptotic cells. Photographed with Nikon Eclipse 80i Microscope at 10X magnification.
Fig. 17. Effect of quercetin on EGF-mediated changes in the protein expression of E-cadherin (A) in PC-3 cell line by Immunocytochemistry. Fig. 17 A shows the effect of quercetin on the protein expression of E-cadherin (Red fluorescence), counterstained by DAPI (blue color nuclear stain).
**Fig. 17.** Effect of quercetin on EGF-mediated changes in the protein (B) and mRNA (C) expression of E-cadherin in PC-3 cell line

B) Real Time data was analyzed by the comparative $C_T$ method. Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 18. Effect of quercetin on EGF-mediated changes in the protein expression of N-cadherin in PC-3 cell line by Immunocytochemistry (A)

Fig. 18 A shows the effect of quercetin on the protein expression of N-cadherin (Red fluorescence), counterstained by DAPI (blue color nuclear stain).
Fig. 18. Effect of quercetin on EGF-mediated changes in protein (B) and mRNA (C) expression of N-cadherin

L1- Control
L2-EGF (50ng/ml)
L3- EGF (50ng/ml) + Quercetin (100µM)
L4-Quercetin (100µM)

Real Time data was analyzed by the comparative C_T method. Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 19. Effect of quercetin on EGF-mediated changes in the protein (A) and mRNA (B) expression of Vimentin

L1- Control  
L2- EGF (50ng/ml)  
L3- EGF (50ng/ml) + Quercetin (100µM)  
L4- Quercetin (100µM)

A) Vimentin (57 kDa)  
β-actin (42 kDa)

B) Relative change of vimentin mRNA

Real Time data was analyzed by the comparative C_T method. Each bar represents the mean ± SEM of six independent observations. “a” represents statistical significance at \( P<0.05 \) between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 20. Effect of quercetin on the EGF-mediated changes in protein expressions of ICAM-1 and VCAM-1

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 21. Effect of quercetin on the EGF-mediated changes in protein expressions of P-Selectin and E-Selectin

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 22. Effect of quercetin on the EGF-mediated changes in protein expressions of MMP-2 and MMP9

L1- Control  
L2-EGF (50ng/ml)  
L3- EGF (50ng/ml) + Quercetin (100µM)  
L4-Quercetin (100µM)

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $$P<0.05$$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 23  Effect of quercetin on EGF-mediated changes in mRNA expression of Snail, Slug and Twist

Real Time data was analyzed by the comparative C\textsubscript{T} method. Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
**Fig. 24** Effect of quercetin on EGF-mediated changes in protein expression of Snail, Slug and Twist

Each bar represents the mean ± SEM of three independent observations. “a” represents statistical significance at $P<0.05$ between control v/s other treatment groups, “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 25. Effect of quercetin on EGF induced cell migration in PC-3 cells

The number of cells migrated were counted manually and percentage of cells migrated was counted and plotted, the respective histogram is shown. Each bar represents the mean ± SEM of three independent observations. “a” control v/s others; “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Black arrows indicate the cells invaded, cells were counted manually and percentage of cells invaded was calculated and plotted, the respective histogram is shown. Each bar represents the mean ± SEM of three independent observations. Significance at P<0.05 level using Student’s–Newman–Keul’s test. “a” control v/s others; “b” EGF v/s EGF+Q, Q and “c” EGF+Q v/s Q.
Fig. 27. Effect of quercetin on the cell viability of HUVEC cells by MTT assay

Each bar represents the mean ± SEM of six independent observations. $P < 0.05$ was considered to be statistically significant. “a” represents statistical significance between control v/s other treatment groups.
Fig. 28. Effect of quercetin on EGF-induced cell migration in HUVEC cells

Cells were scratched with a pipette tip and washed twice with PBS and photographed (0 h). Scratched cells were treated with quercetin, EGF for 24 h. Cell migration into the wound surface was then observed by microscopy after 24 h and photographed at 10X magnification.
Fig. 29. Effect of quercetin on EGF-induced tube formation in HUVEC cells

HUVEC cells were seeded in matrigel coated plates and treated with quercetin and EGF for 24 h. Tube formation was then observed by microscopy after 24 h and photography.