

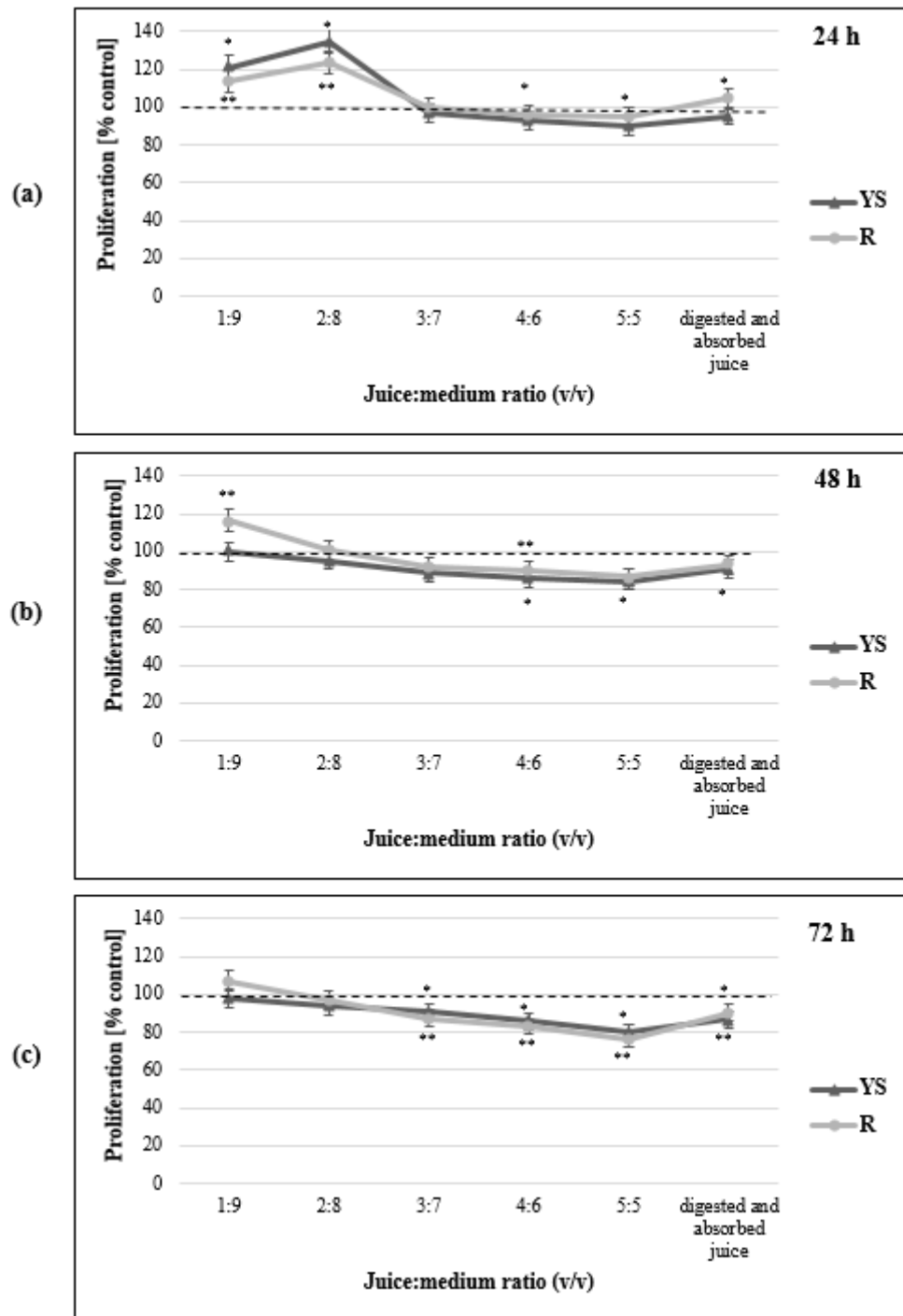
**Supplementary Figure S1.** Changes in the proliferation of MCF-7 cancer cells line at 24 (a), 48 (b) and 72 (c) hours.

YS - native juice of young shoots of beetroot, R - native juice of beetroot

\* - statistically significant differences for the proliferation value at the YS point and at the point for the juice after digestion and absorption in relation to the control

\*\* - statistically significant differences for the proliferation value at point R and at the point for the juice after digestion and absorption in relation to the control

$p \leq 0,05$ ; the Mann-Whitney U test



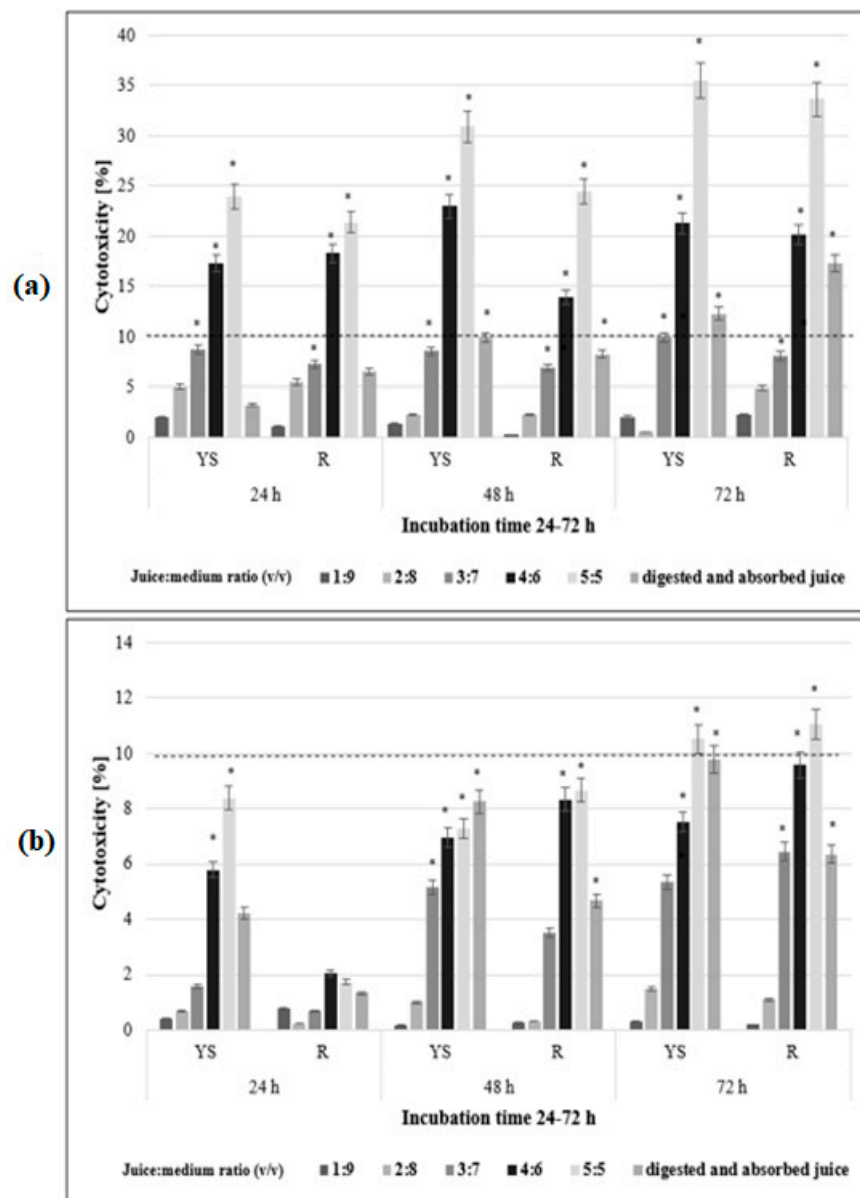
**Supplementary Figure S2.** Changes in the proliferation of MDA-MB-231 cancer cells line at 24 (a), 48 (b) and 72 (c) hours.

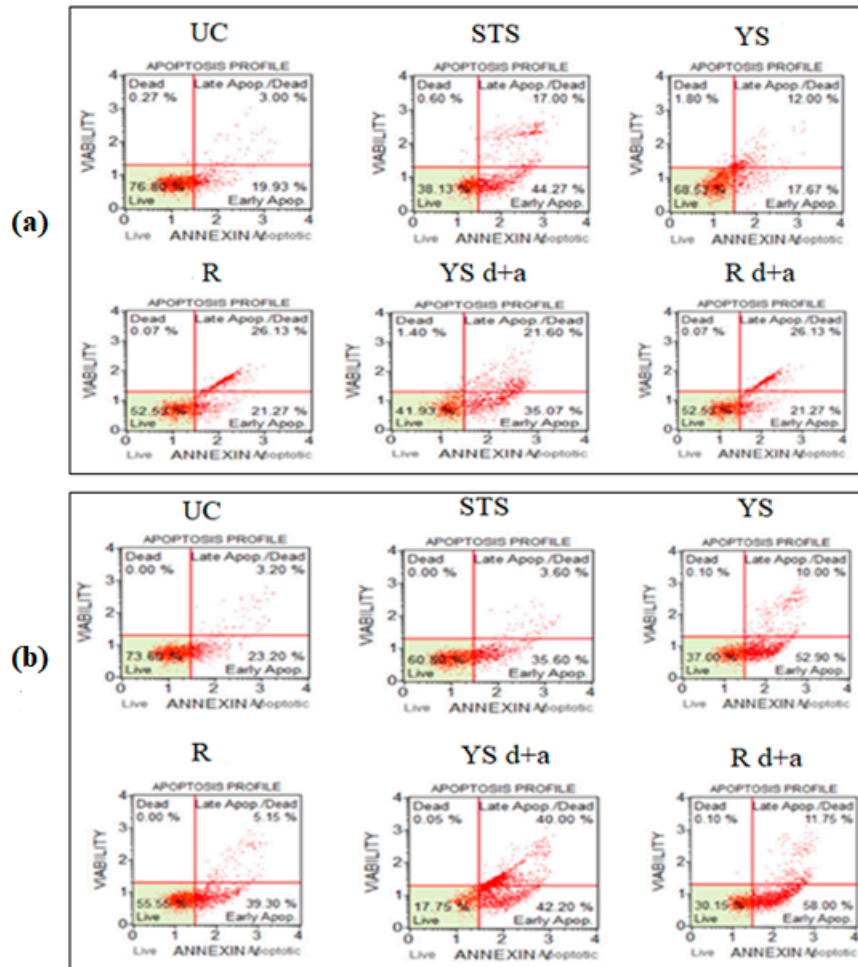
YS - native juice of young shoots of beetroot, R - native juice of beetroot

\* - statistically significant differences for the proliferation value at the YS point and at the point for the juice after digestion and absorption in relation to the control

\*\* - statistically significant differences for the proliferation value at point R and at the point for the juice after digestion and absorption in relation to the control

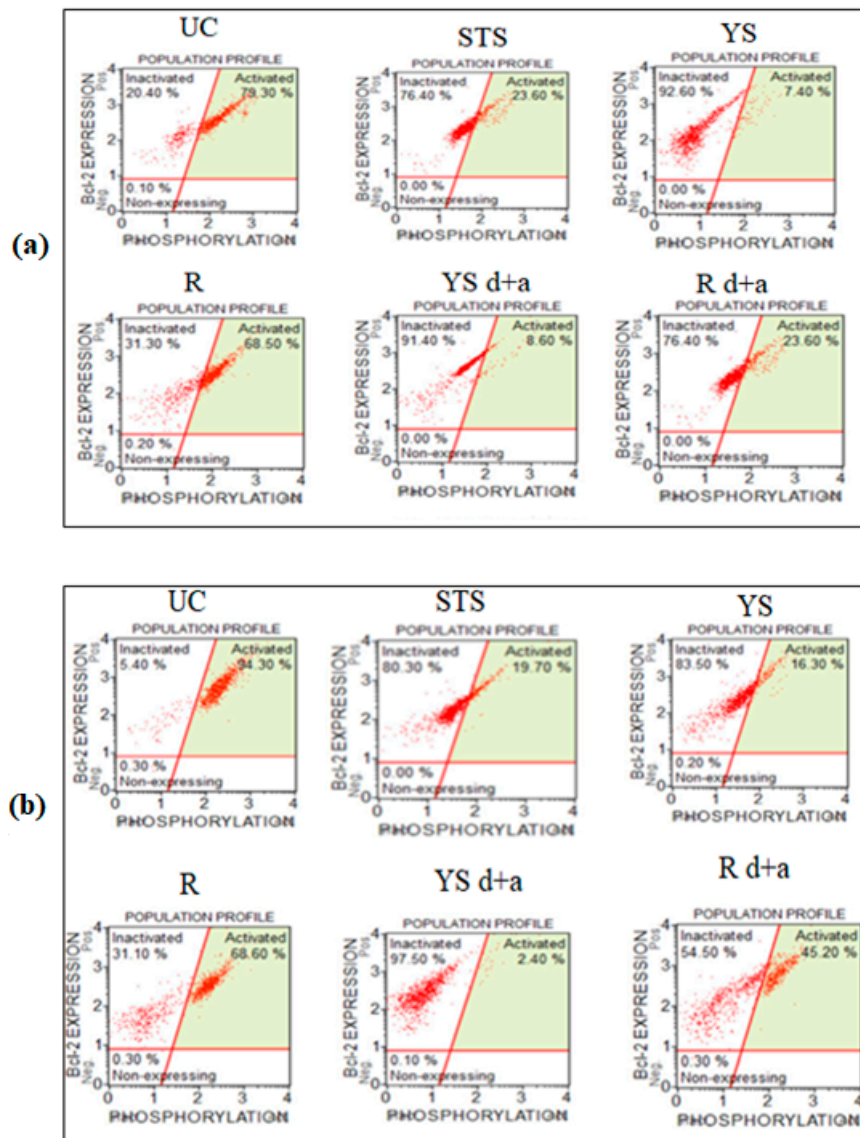
$p \leq 0,05$ ; the Mann-Whitney U test





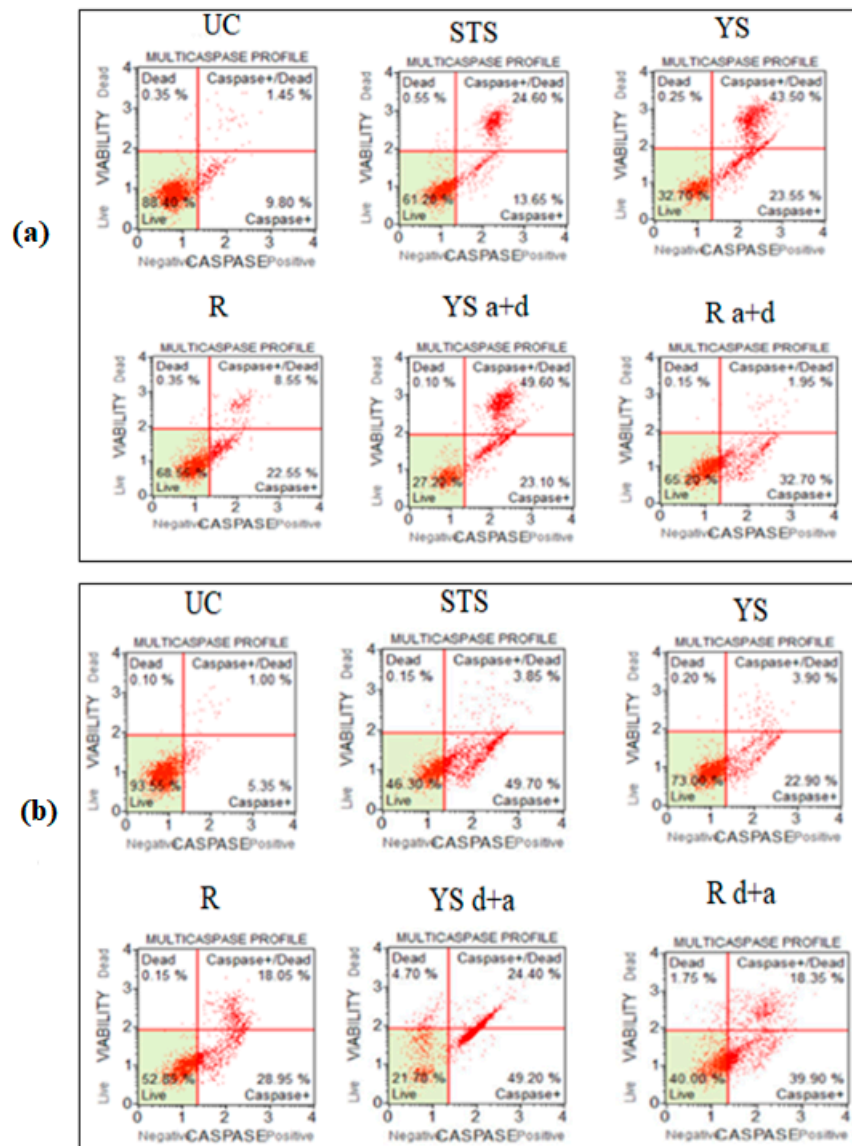
**Supplementary Figure S4.** The influence of the tested material and staurosporine on the induction of apoptosis in MCF-7 (a) and MDA-MB-231 (b) cancer cells lines.

UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption.



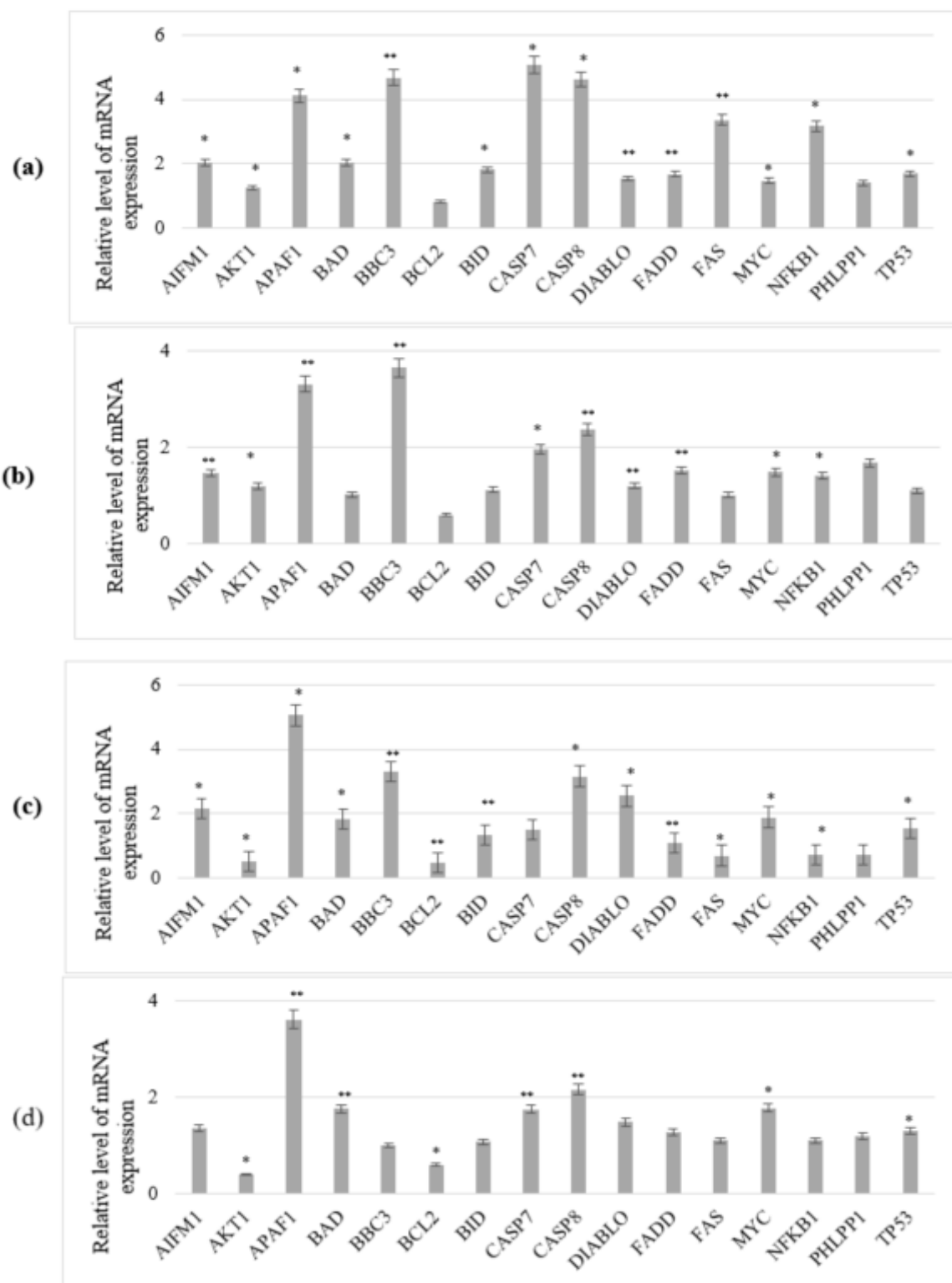
**Supplementary Figure S5.** The influence of the tested material and staurosporine on the inactivation of the BCL-2 protein in MCF-7 (a) and MDA-MB-231 (b) cancer cells lines.

UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption.



**Supplementary Figure S6.** The influence of the tested material and staurosporine on the activation of caspases in MCF-7 (a) and MDA-MB-231 (b) cancer cells lines.

UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption.

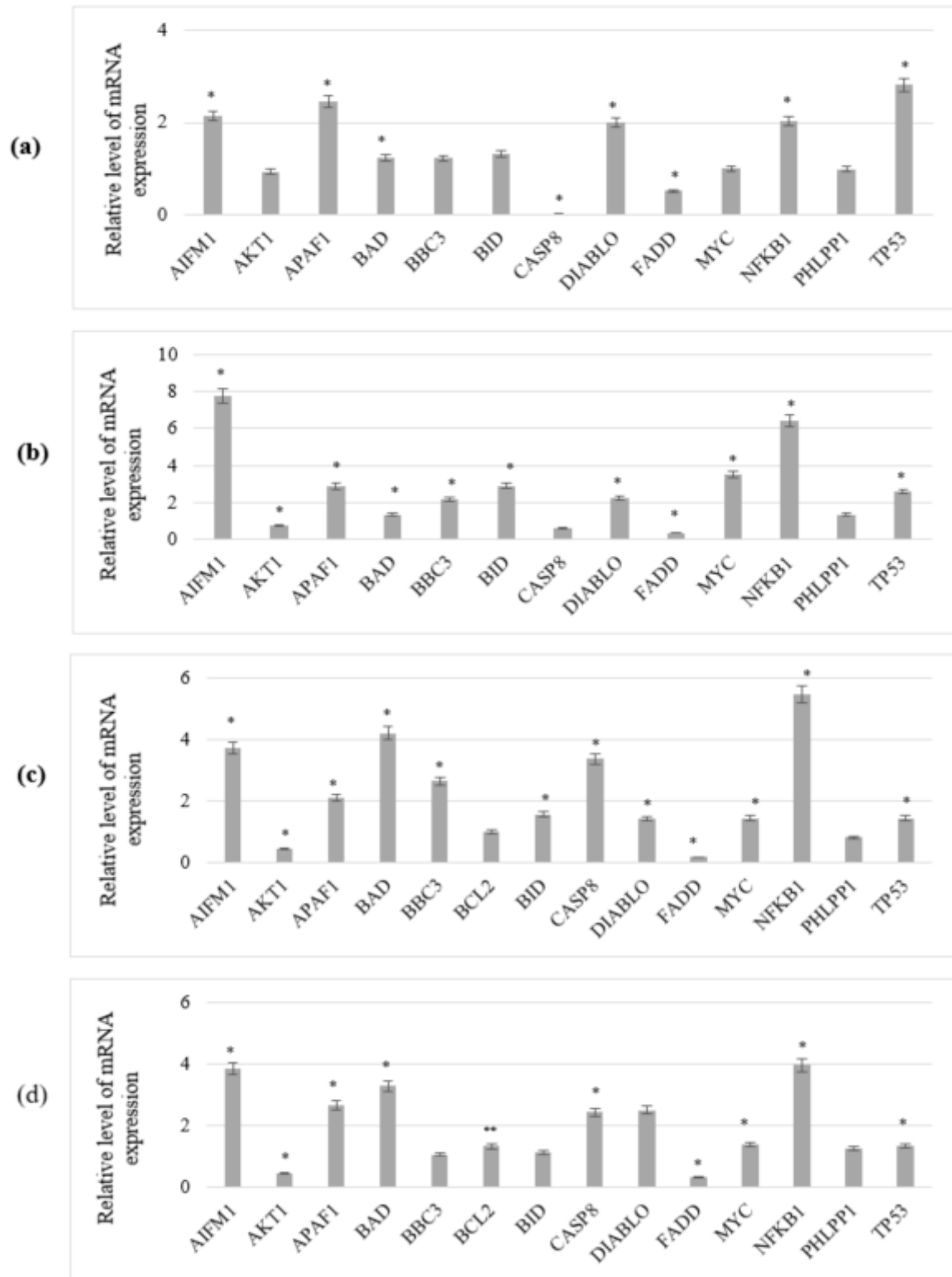


**Supplementary Figure S7.** Expression of selected genes associated with apoptosis and the cell cycle in MCF-7 cancer cell line, as a result of the action of YS (a), R (b), YS d+a (c), R d+a (d)

YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption.

\*  $p \leq 0.05$  compared to controls; U Mann-Whitney test

\*\*  $p \leq 0.1$  compared to controls; U Mann-Whitney test



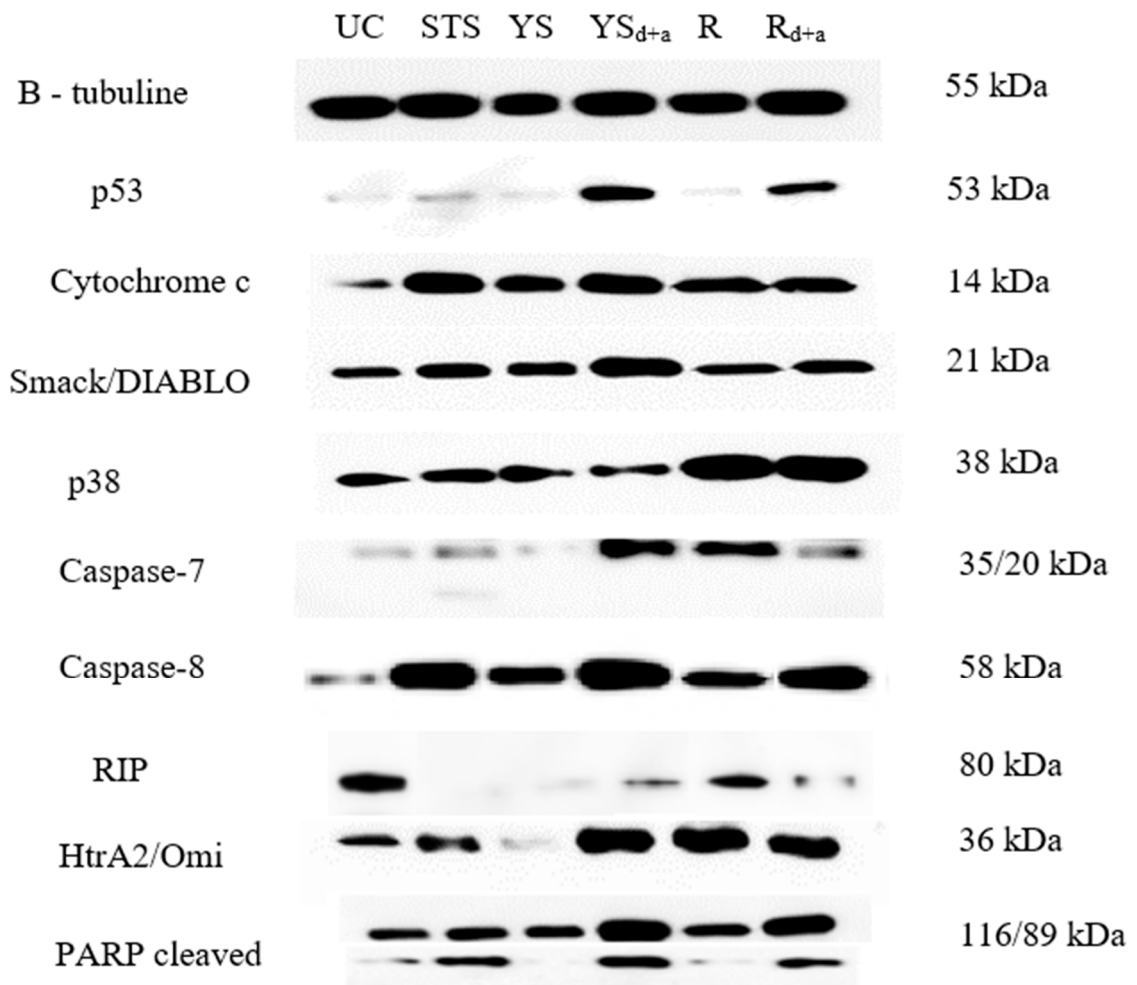
**Supplementary Figure S8.** Expression of selected genes associated with apoptosis and the cell cycle in MDA-MB-231 cancer cell line, as a result of the action of YS (a), R (b), YS d+a (c), R d+a (d)

YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption.

\*  $p \leq 0.05$  compared to controls; U Mann-Whitney test

\*\*  $p \leq 0.1$  compared to controls; U Mann-Whitney test

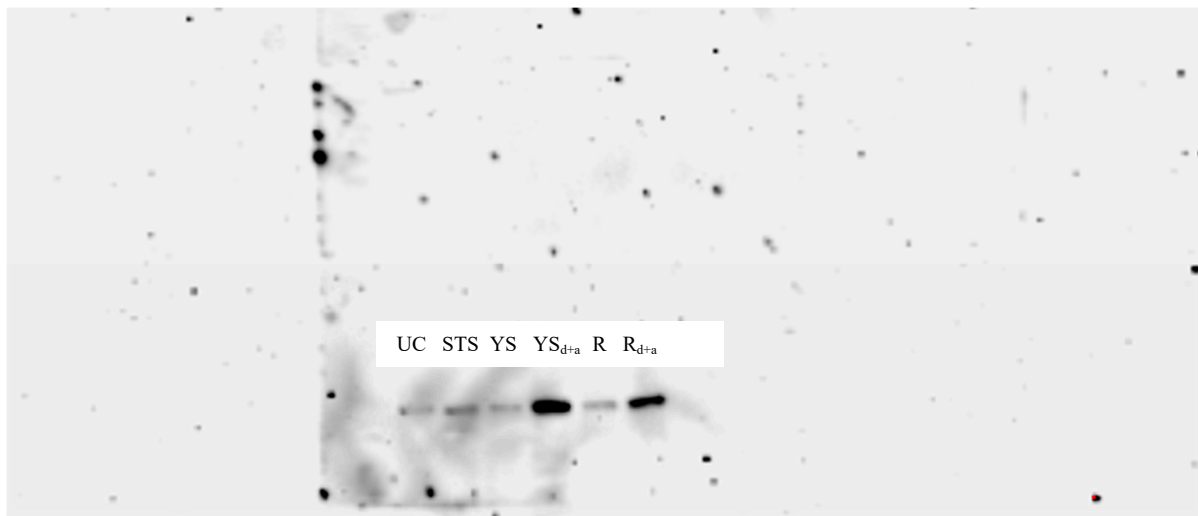




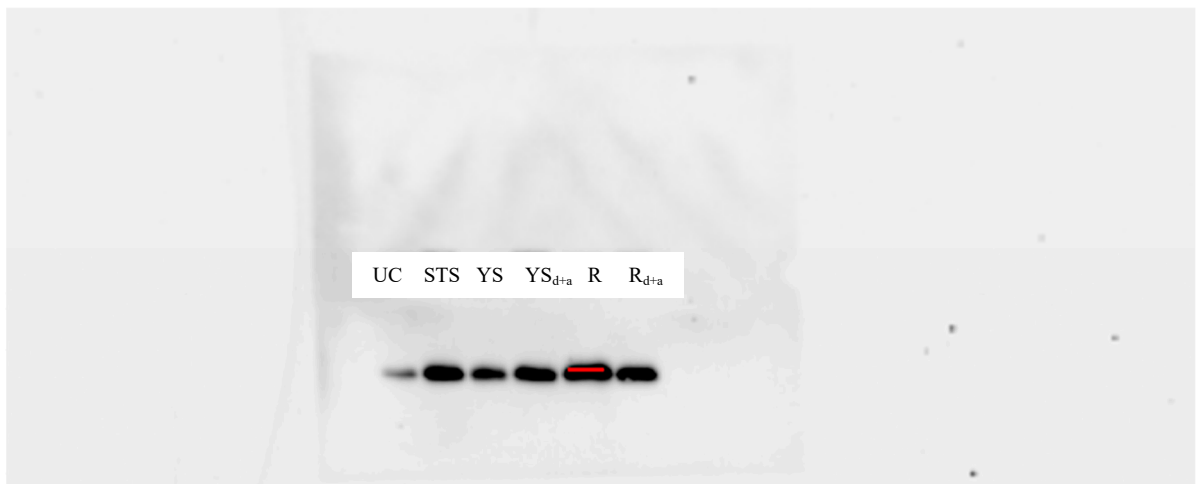
**Supplementary Figure S9.** Expression of selected apoptosis-related proteins in MCF-7 cancer cells line.

UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption,

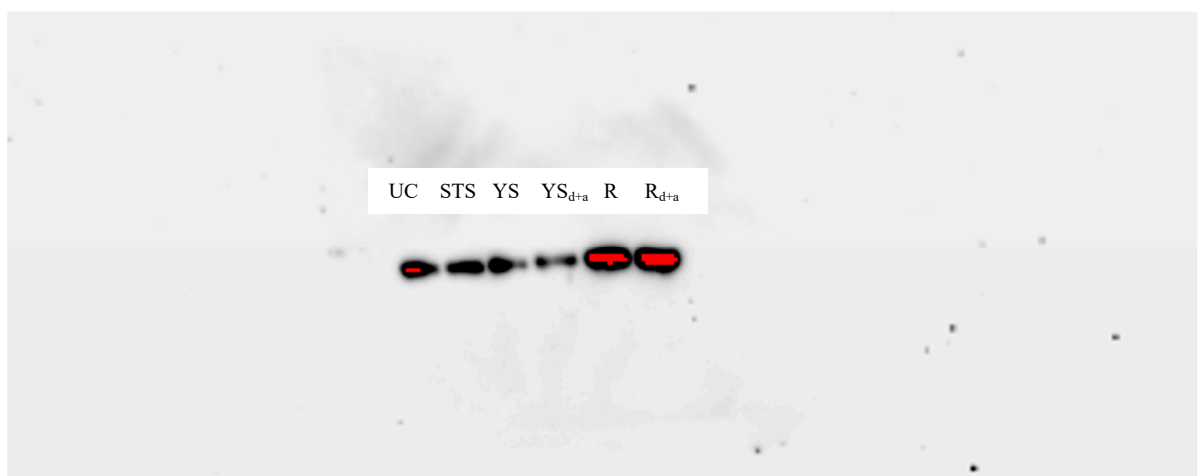
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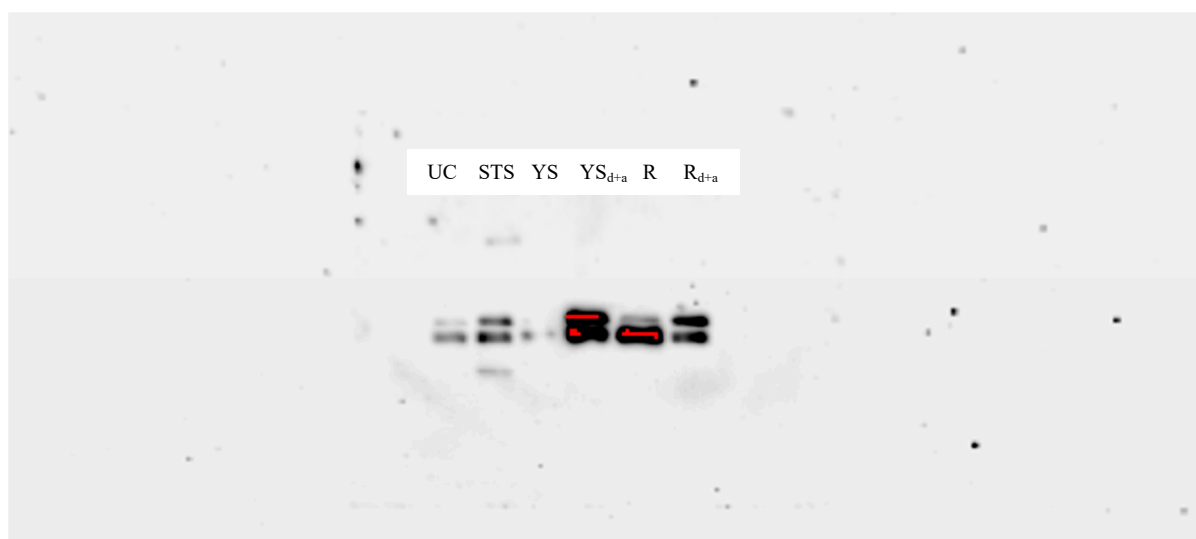
Cyt c



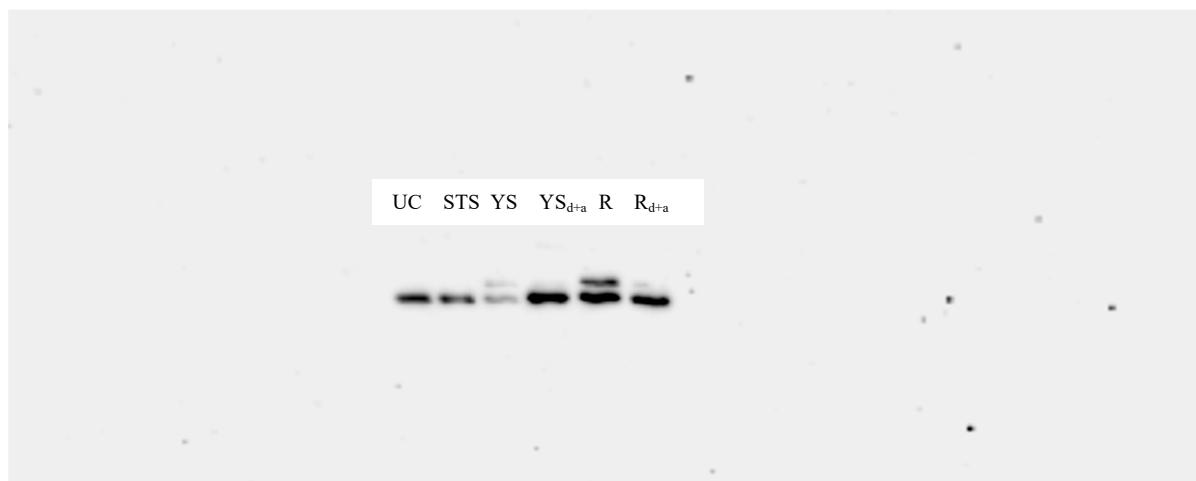
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Caspase -7

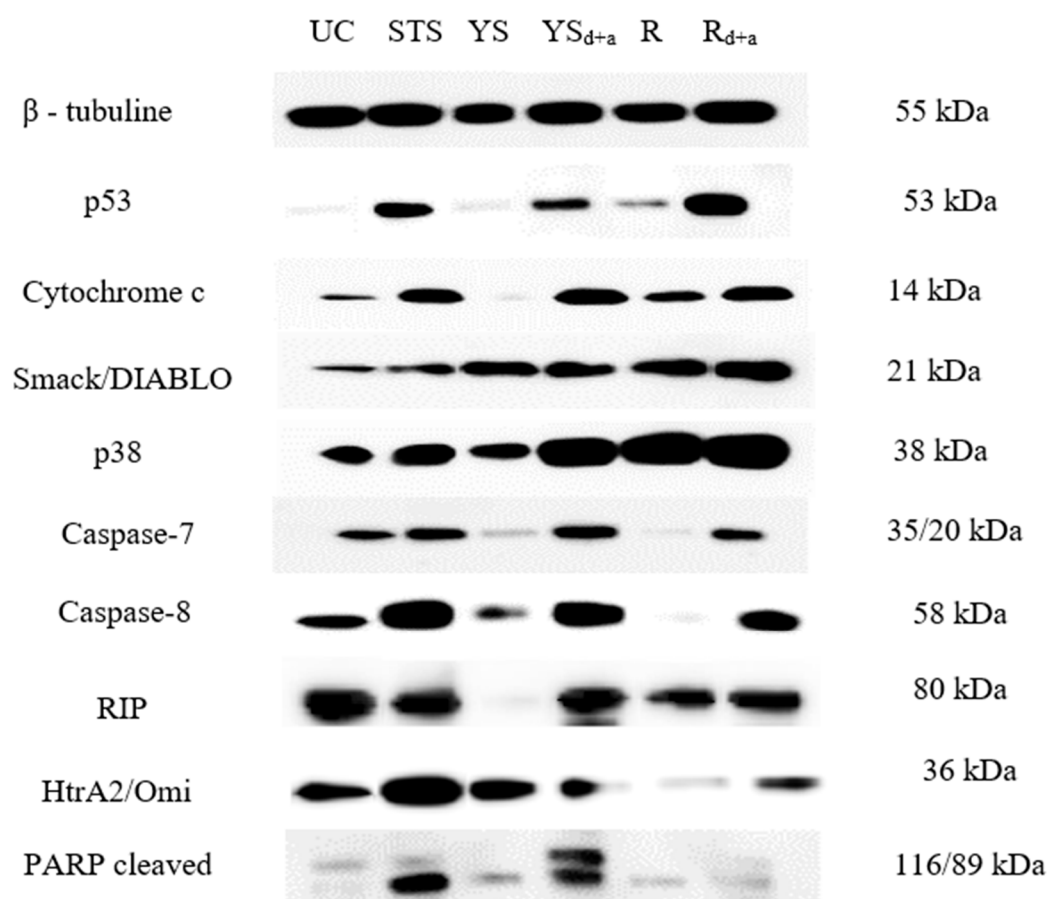


HtrA2/Omi



**Supplementary Figure S10.** Selected western blots images in MCF-7 cancer cells line.

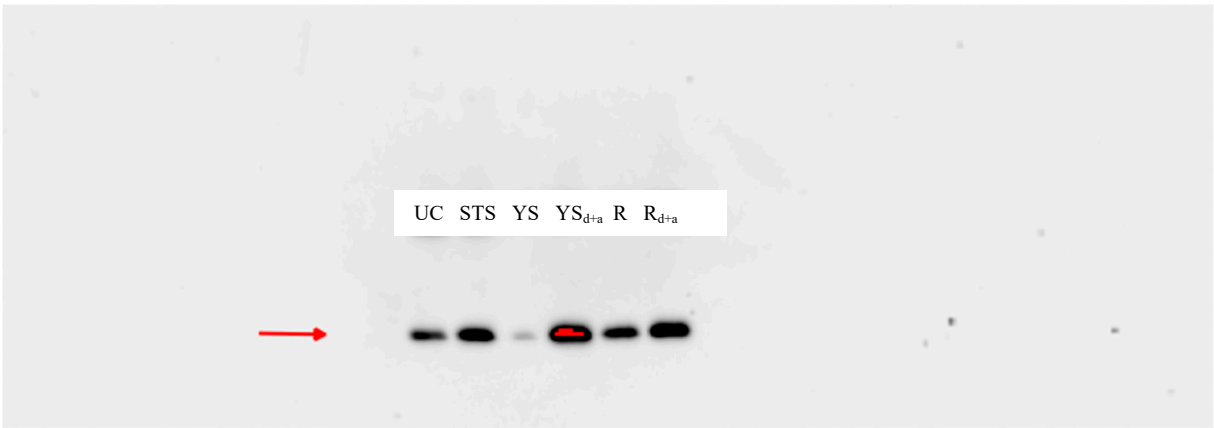
UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption,



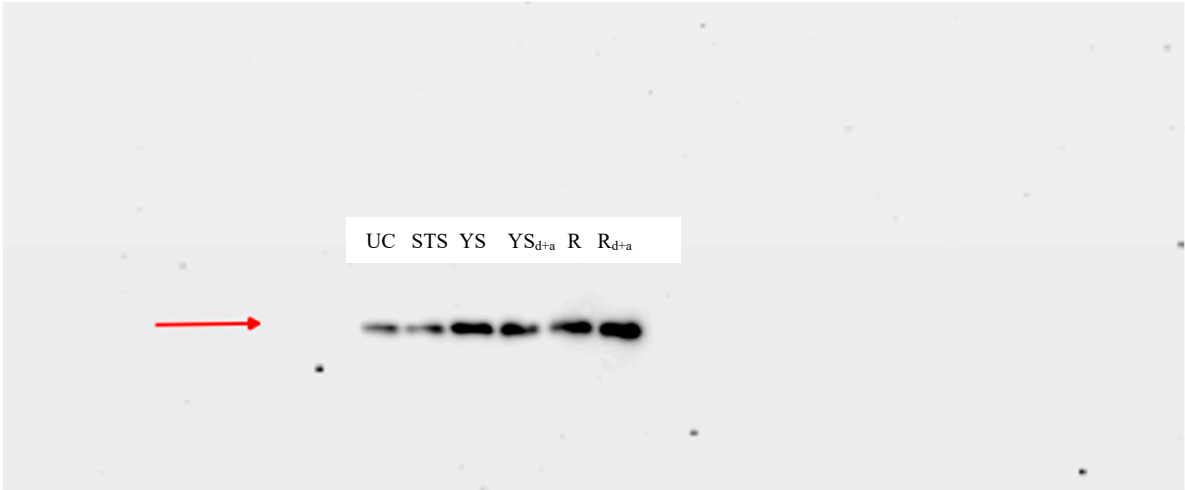
**Supplementary Figure S11.** Expression of selected apoptosis-related proteins in MDA-MB-231 cancer cells line.

UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS d+a - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R d+a - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption,

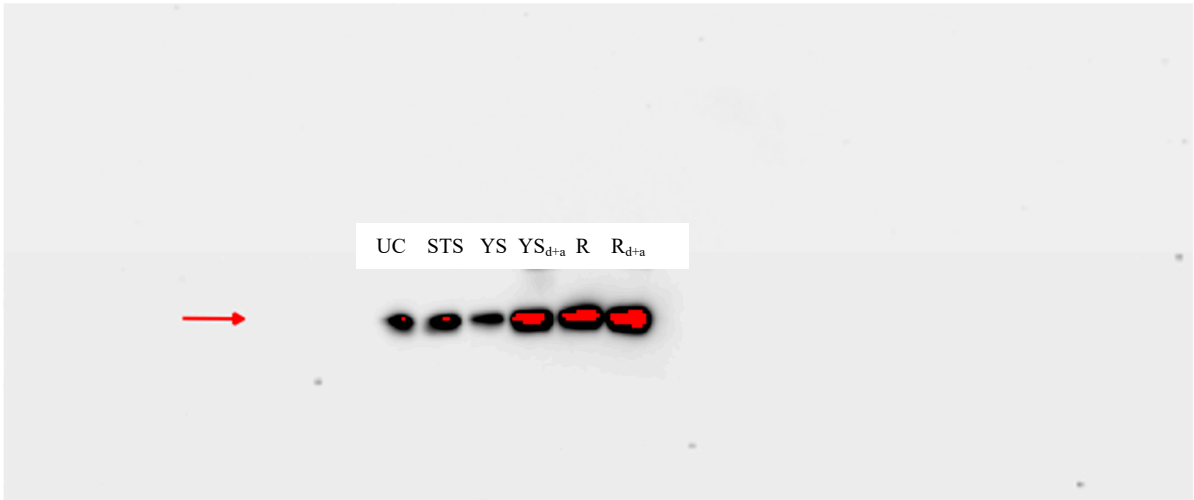
Cytochrome c



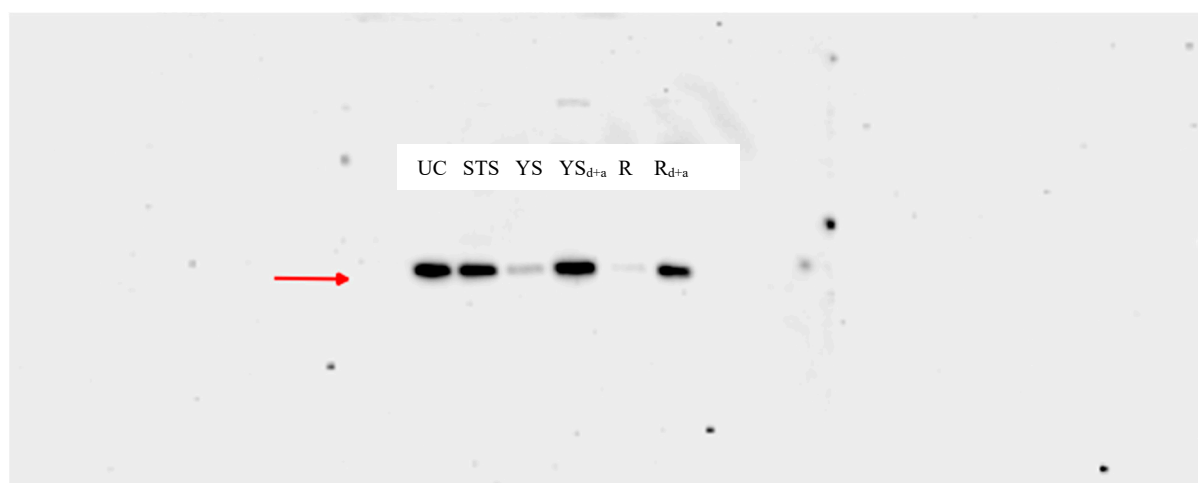
Smack/DIABLO



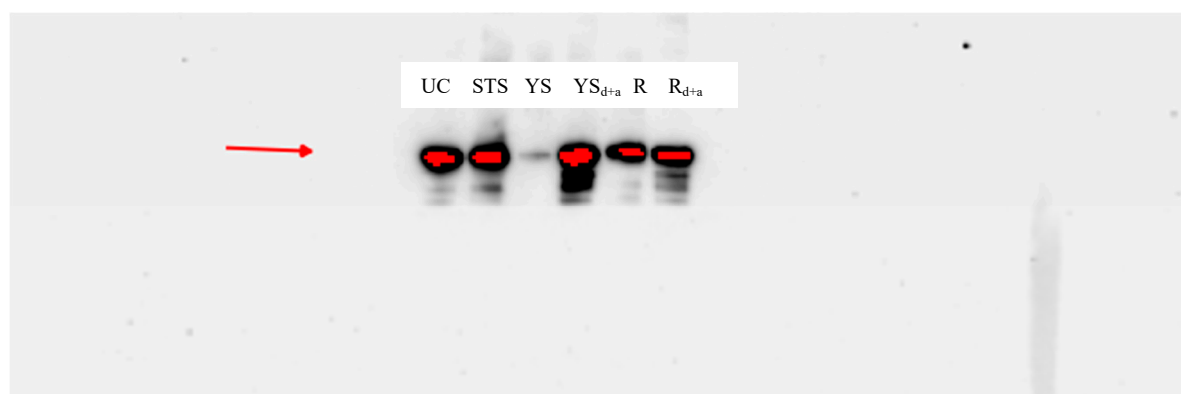
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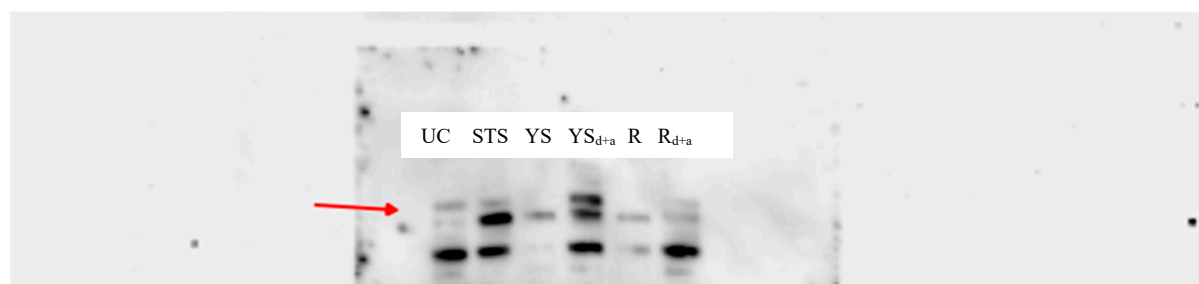
## Caspase-7



## RIP



## PARP cleaved



**Supplementary Figure S12.** Selected western blots images in MDA-MB-231 cancer cells line.

UC - untreated control, STS - staurosporine, YS - native juice of young shoots of beetroot, R - native juice of beetroot, YS<sub>d+a</sub> - juice of young shoots of red beet subjected to *in vitro* gastrointestinal digestion and absorption, R<sub>d+a</sub> - juice of beetroot subjected to *in vitro* gastrointestinal digestion and absorption,