

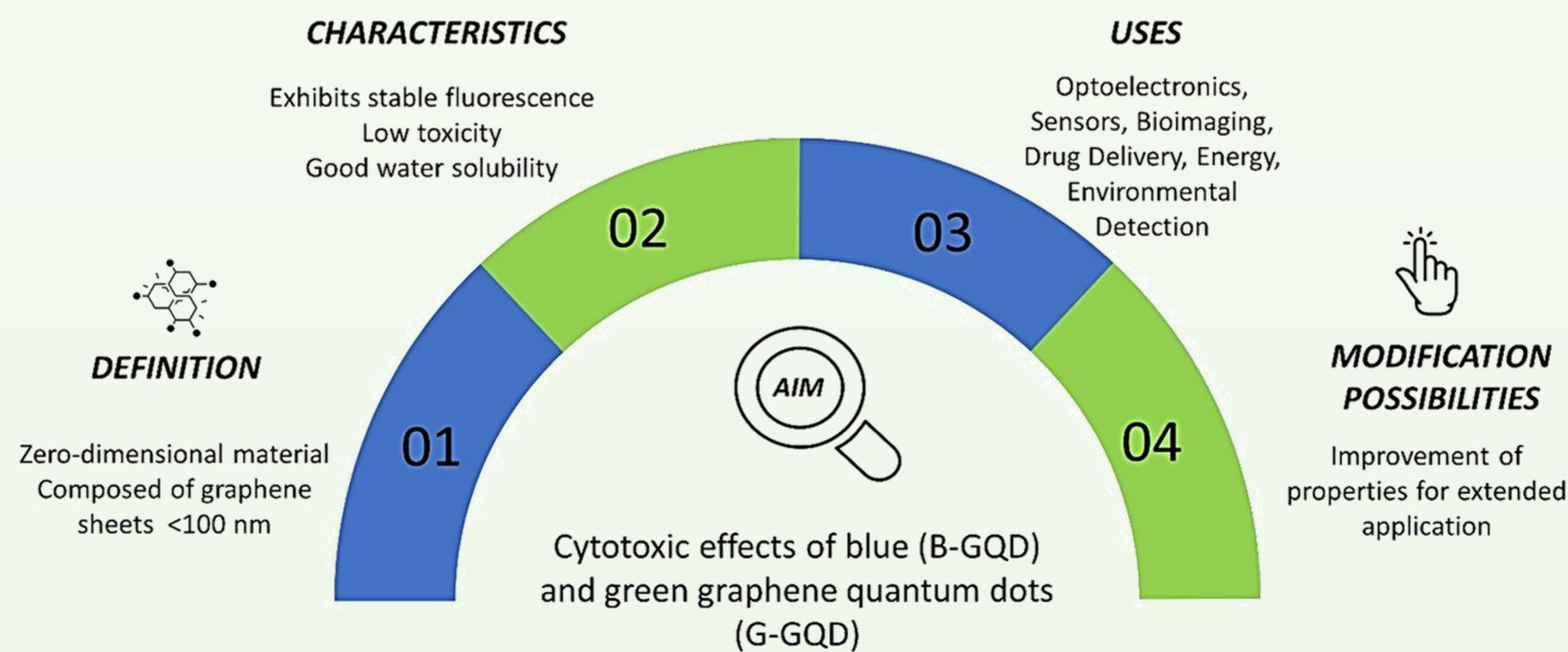
BIOACTIVITY ASSESSMENT OF GRAPHENE QUANTUM DOTS ON HEK293T CELLS

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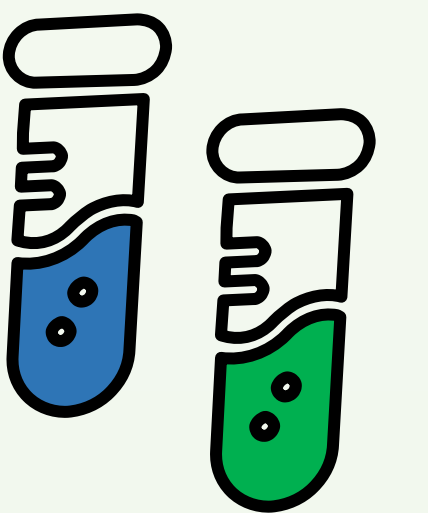
INTRODUCTION



METHODS

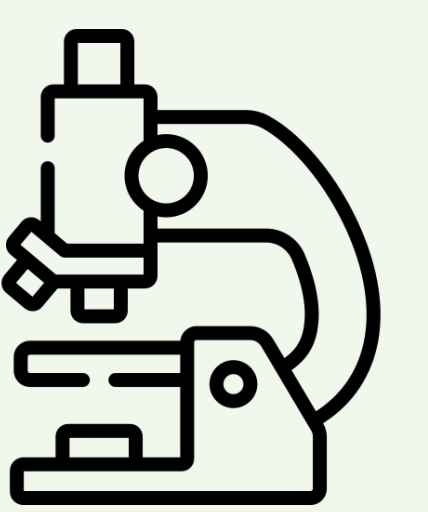
Cell Treatment

HEK293T cells (10^5 cells/mL), 48-hours cultivation
Treated after 24 hours with B-GQDs and G-GQDs
Concentrations (2,5; 5 and 10 $\mu\text{g}/\text{mL}$)



Tests

1. MTT colorimetric assay
2. Apoptosis/necrosis, fluorescent microscopy
3. Autophagy detection, fluorescent microscopy



RESULTS

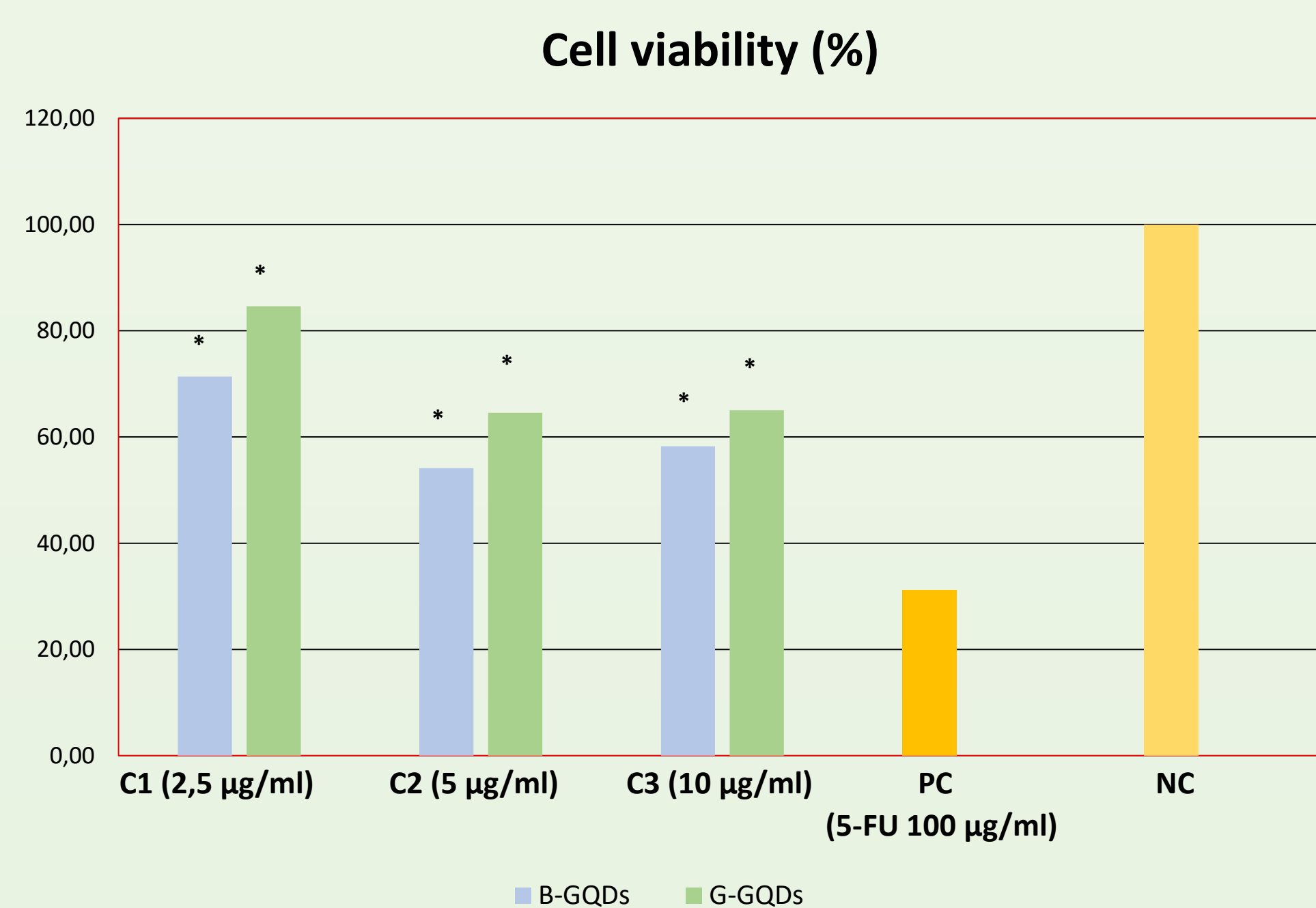


Figure 1. Viability of HEK293T cells measured by MTT assay after treatment with B-GQDs and G-GQDs (* $p < 0.001$).

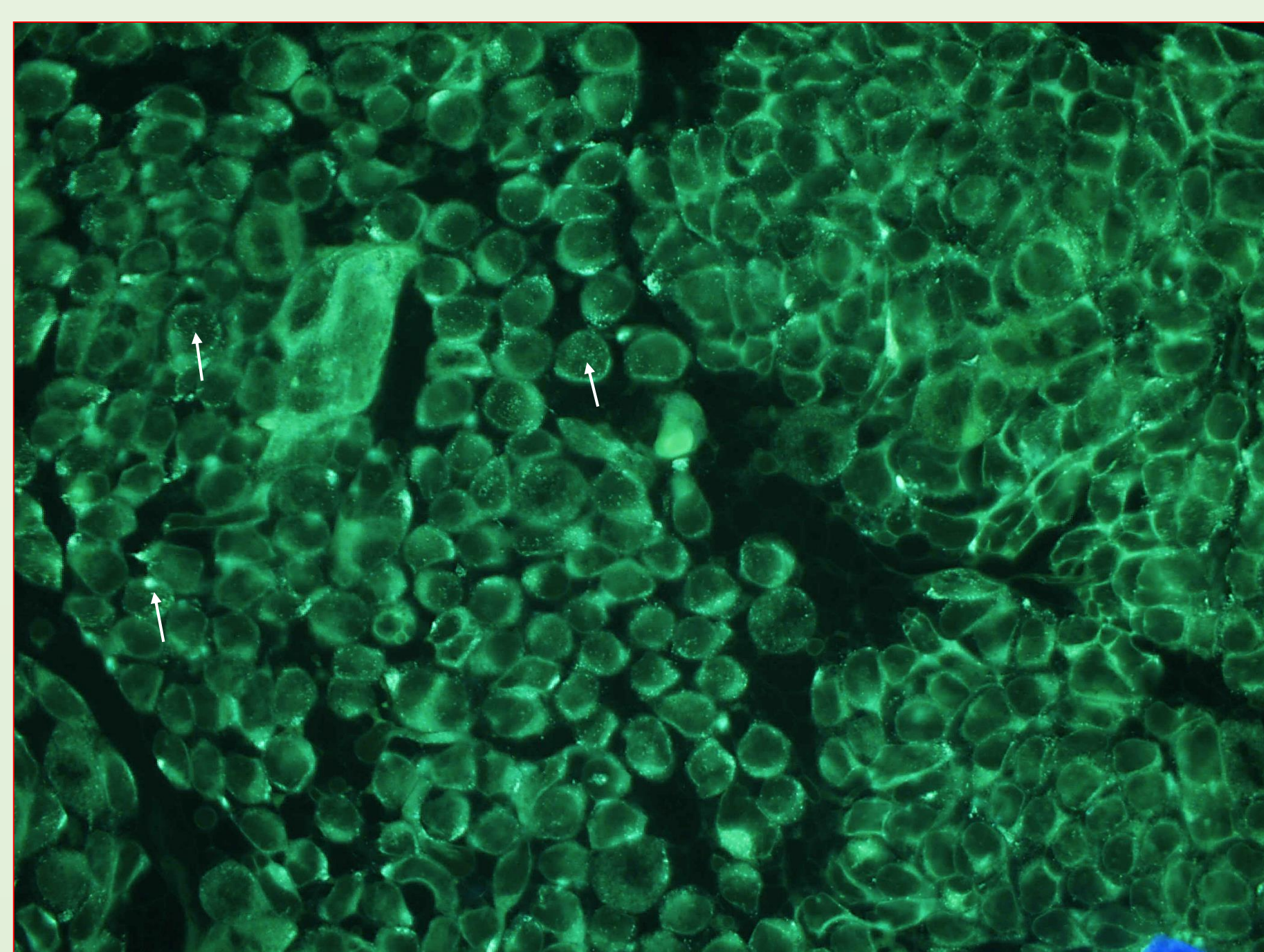


Figure 4. Autophagosomes in HEK293T cells after treatment with GQDs (400x).

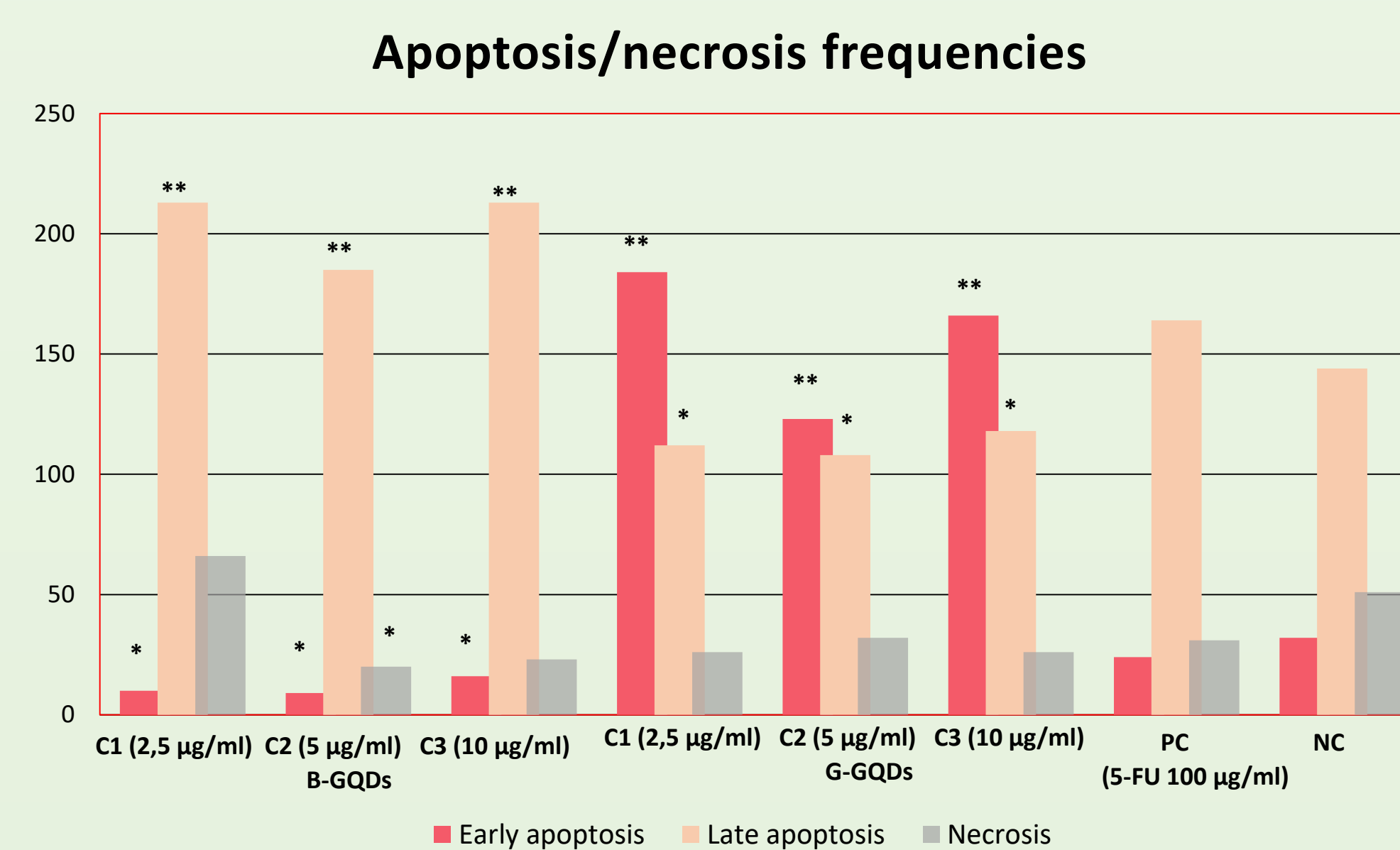


Figure 2. Effects of B-GQDs and G-GQDs treatment on apoptosis and necrosis induction in HEK293T cells (* $p < 0.05$ statistically significant decrease compared to NC; ** $p < 0.05$ statistically significant increase compared to NC).

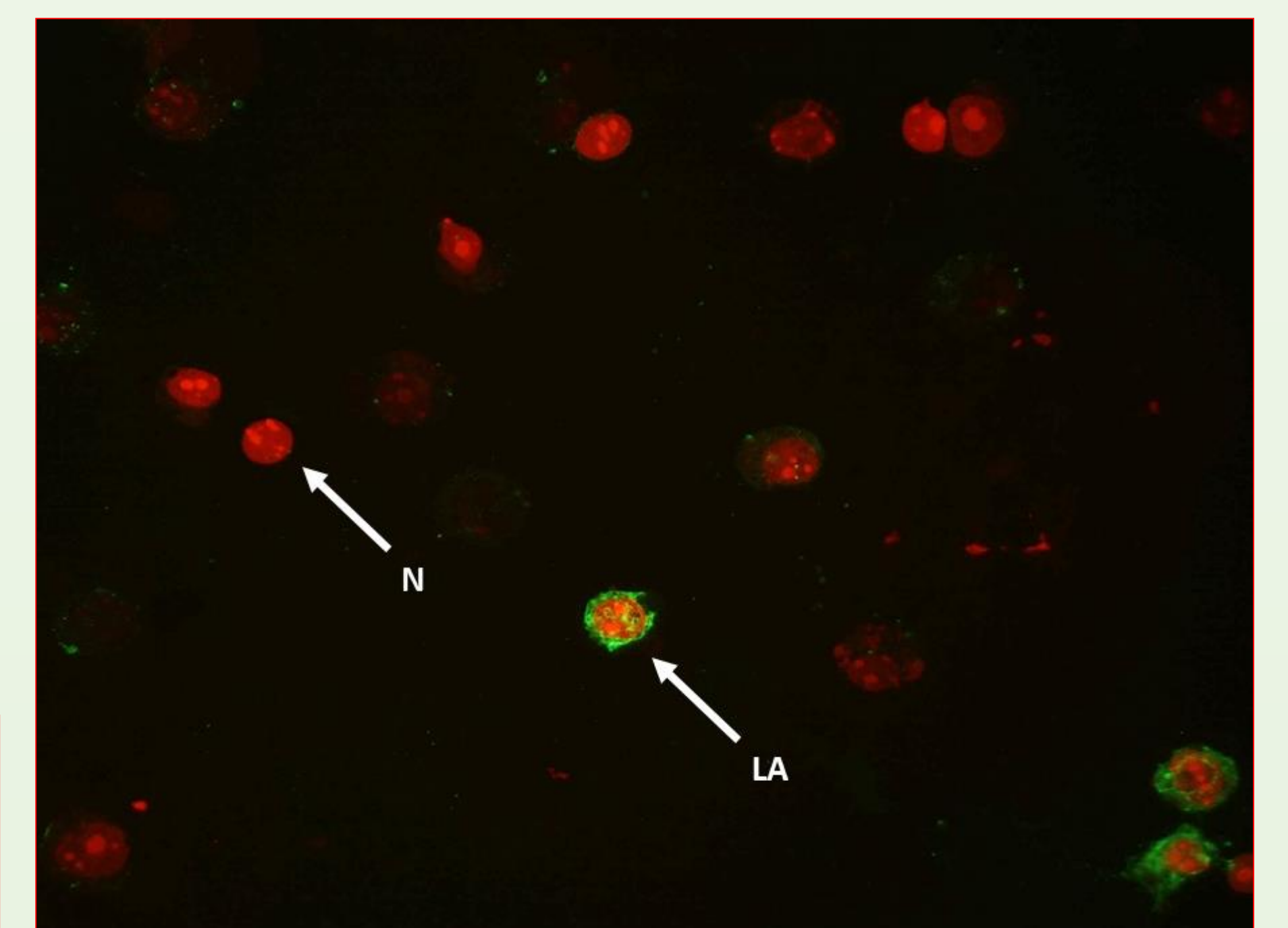


Figure 3. Apoptotic/necrotic HEK293T cells after treatment with GQDs. N (Necrosis) and LA (Late Apoptosis) (400x).

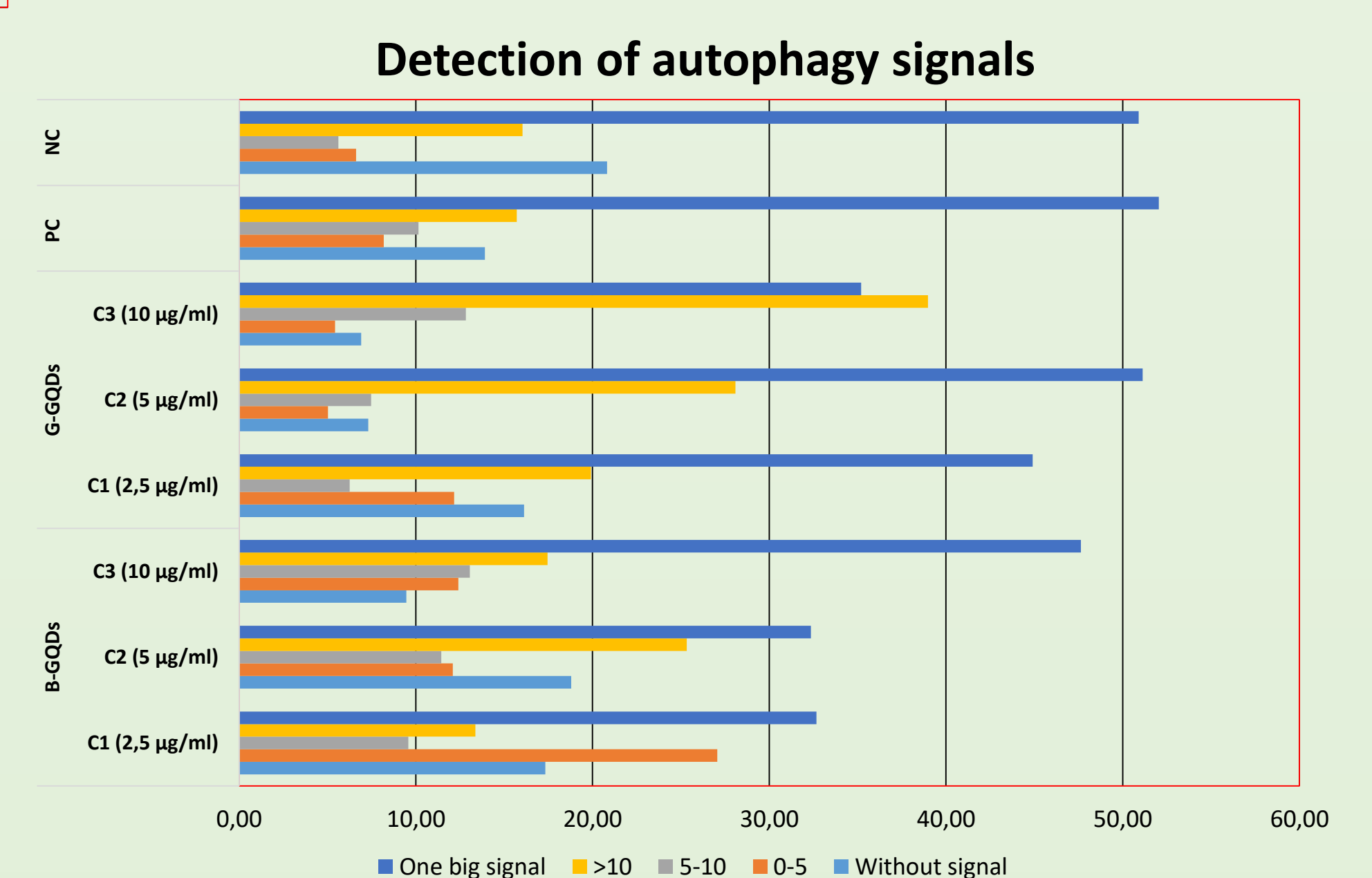


Figure 5. Distribution (%) of categorized autophagosomes in HEK293T cells after B-GQDs and G-GQDs treatment.

CONCLUSION

Commercial B-GQDs and G-GQDs in applied concentrations induced cytotoxicity by favouring apoptosis as a key event for this effect.