

DITERPENOID-PYRAZOLE HYBRID

Synthesis and evaluation of antitumor activity

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AIM & COMPOUND

The study evaluated compound I, a hybrid incorporating a plant derived diterpenoid fragment and a polysubstituted pyrazole, for growth inhibition and apoptosis in cultured tumor cells.

METHODS

- MTT assay across seven human tumor cell lines.
- Annexin V-FITC/PI and DNA content flow cytometry.
- Real-time PCR for apoptosis-related gene expression.

GROWTH INHIBITION

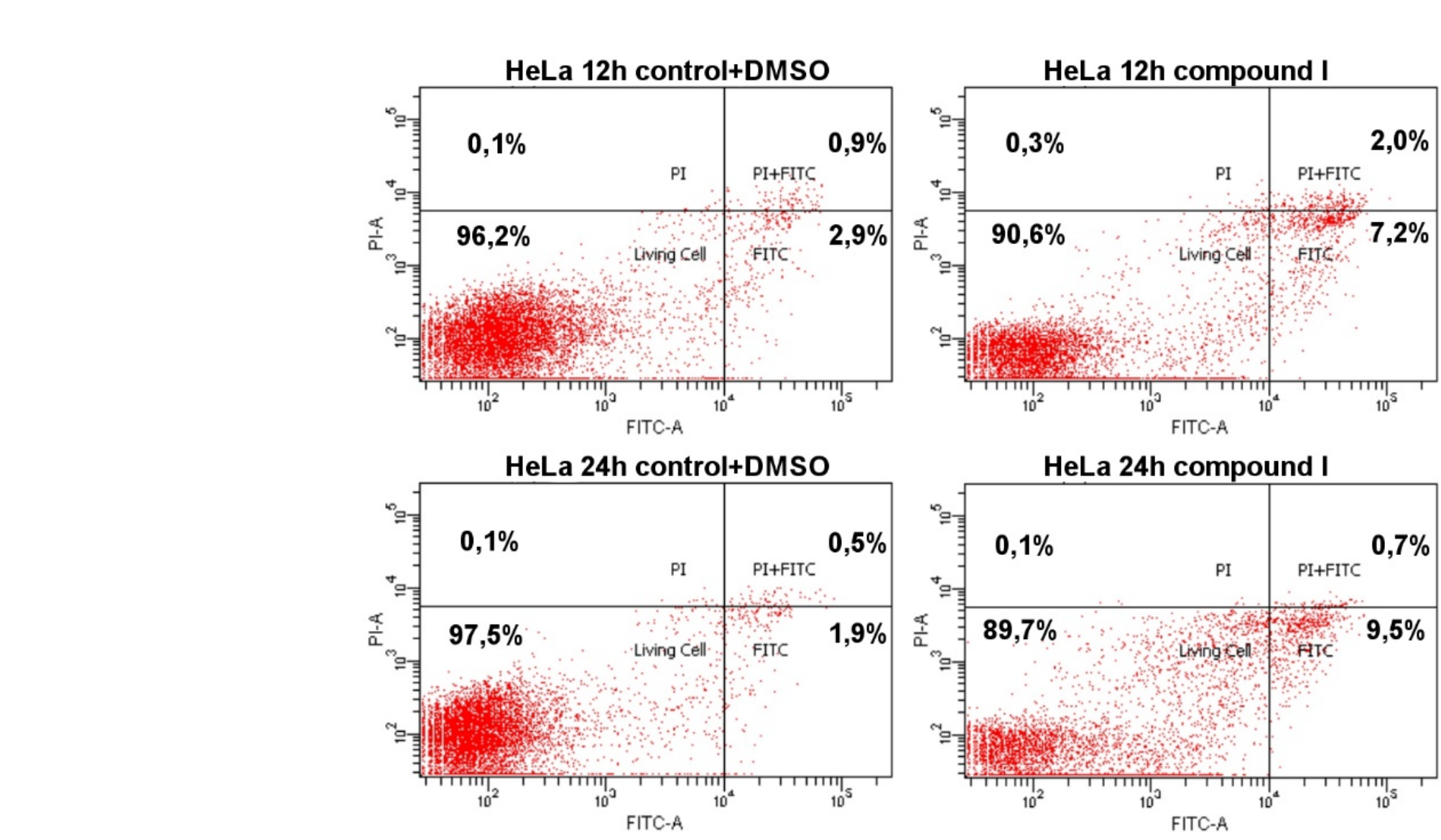
GI50 range

0.39–15.50 μM

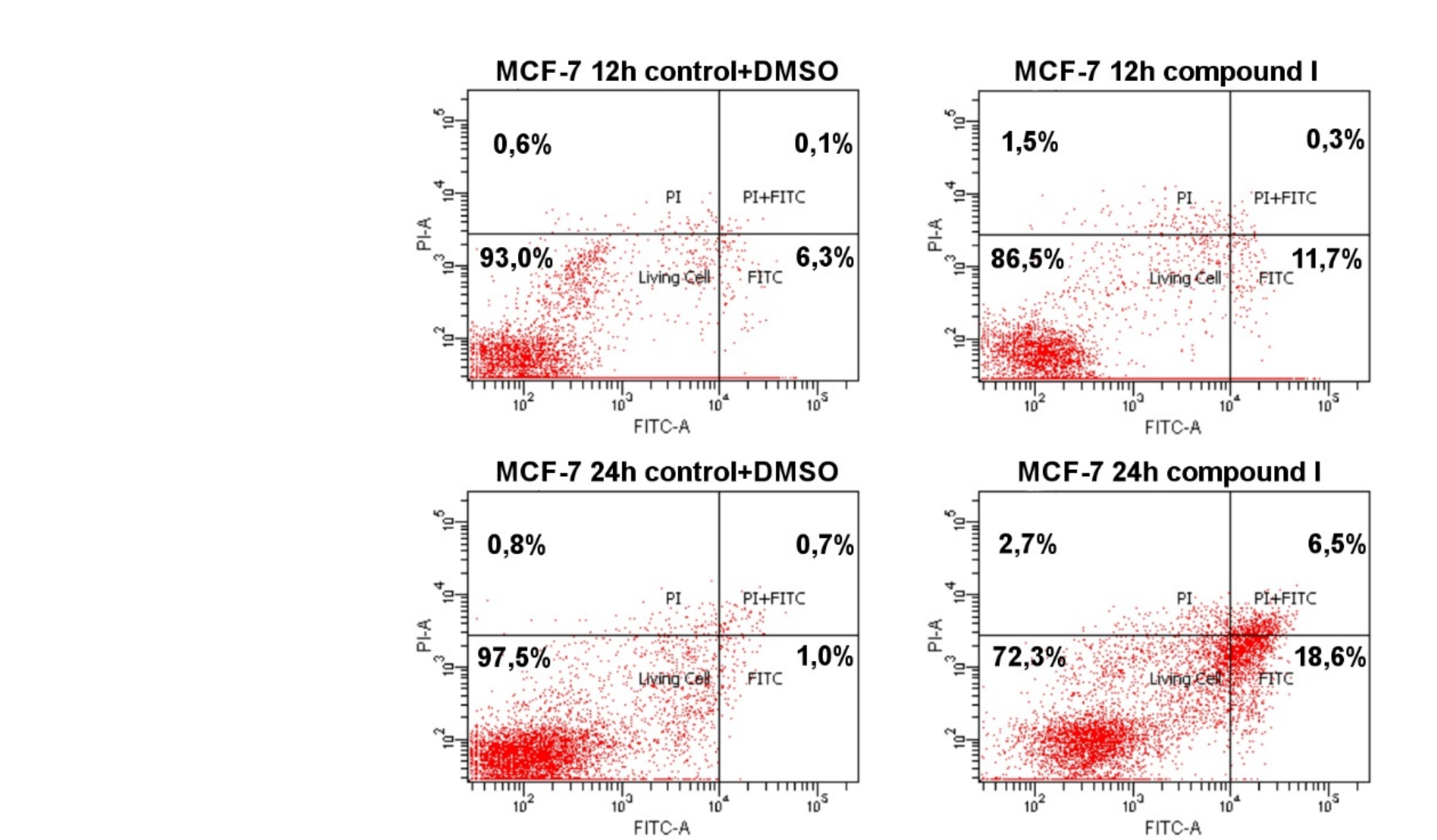
Reported for the tumor cell panel as a whole. The supplied abstract does not identify individual GI50 values for each line.

Cervical	C-33A · CaSki · HeLa
Breast	MCF-7
Prostate	DU-145
Glioblastoma	SNB-19 · T98G

FLOW CYTOMETRY



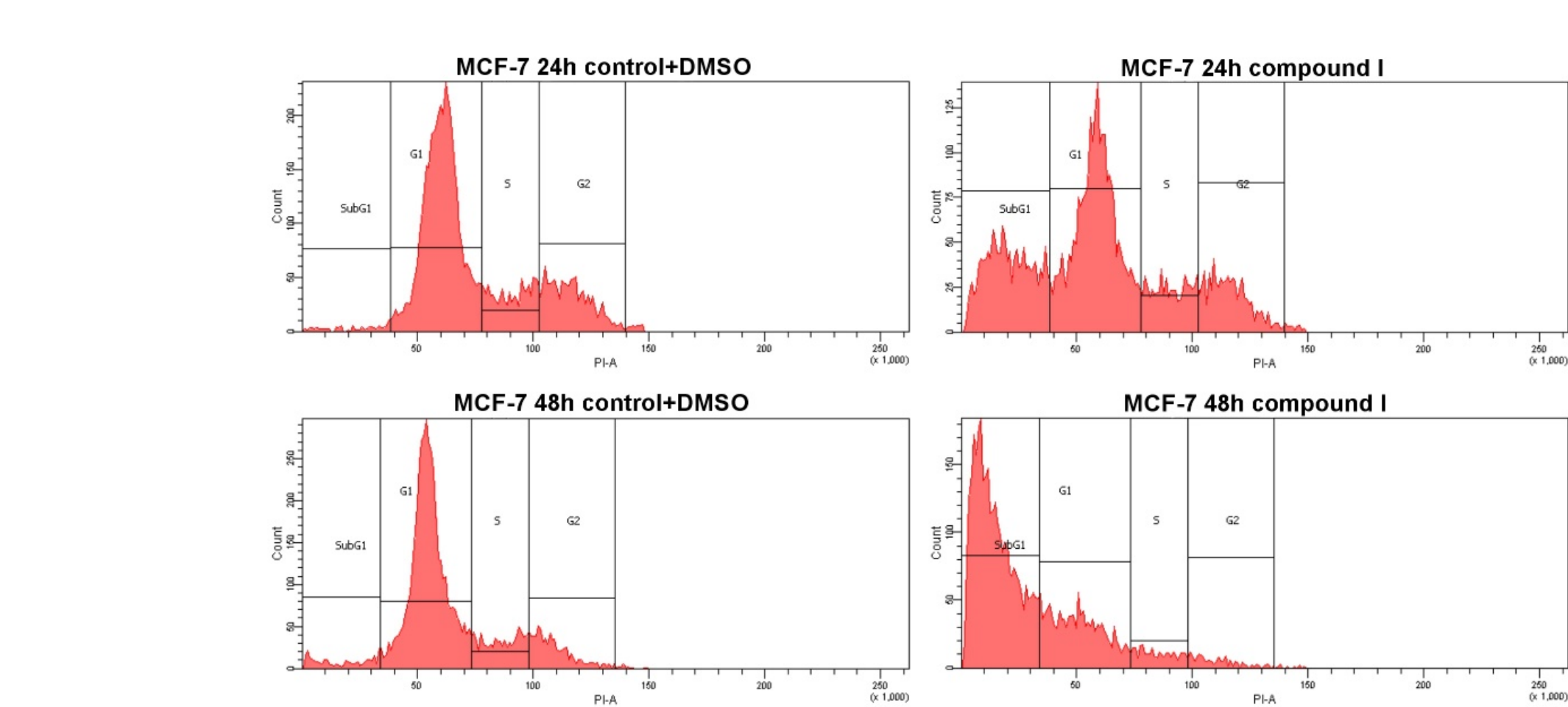
HeLa: Annexin V-FITC / PI, 12 and 24 h



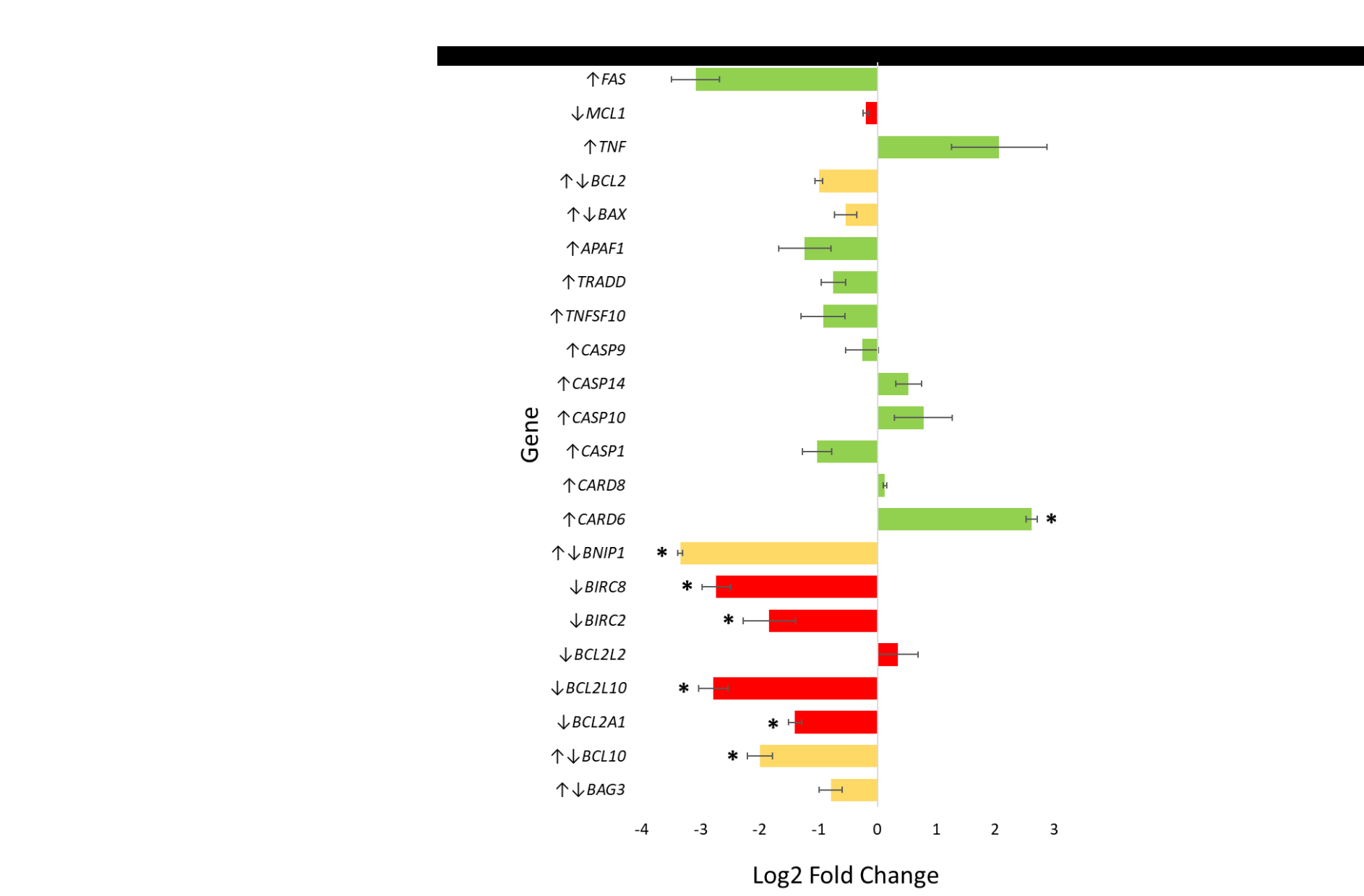
MCF-7: Annexin V-FITC / PI, 12 and 24 h

At 24 h, the Annexin V+ / PI– quadrant rose from 1.9% to 9.5% in HeLa and from 1.0% to 18.6% in MCF-7, relative to matched DMSO controls.

CELL CYCLE



GENE EXPRESSION



In C-33A at 12 h, BCL2A1 and BCL2L10 were downregulated. At 24 h, the abstract reports increased CASP1 and CASP9 expression, consistent with a delayed apoptotic response.

CONCLUSION

The hybrid showed micromolar growth inhibition and changes consistent with apoptosis in vitro. Further preclinical studies are needed to examine selectivity, mechanism and safety.

AUTHORS & FUNDING

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