

Fennel constrains growth of pancreatic cancer by inhibition of proliferation and promotion of apoptosis

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Introduction

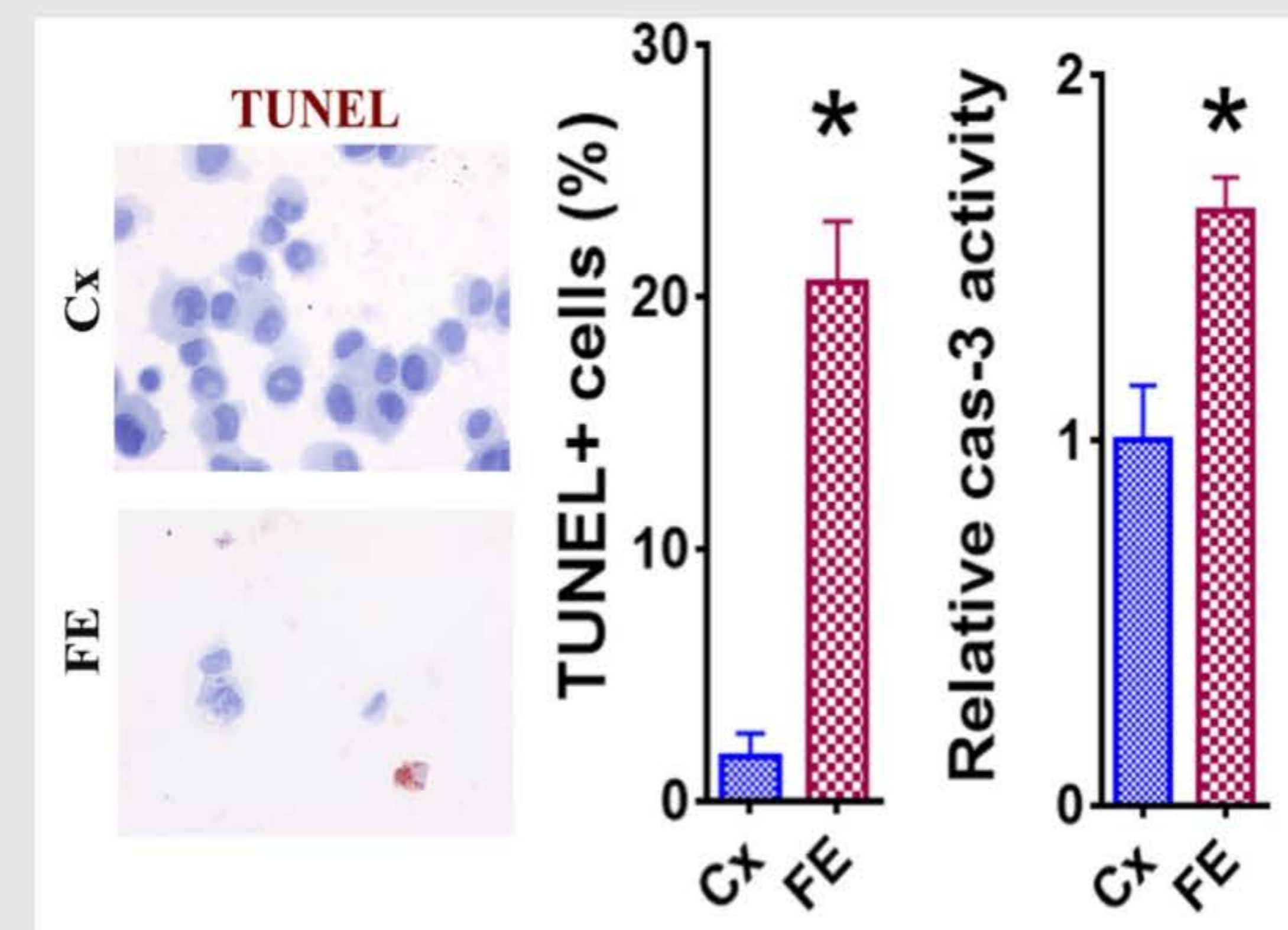
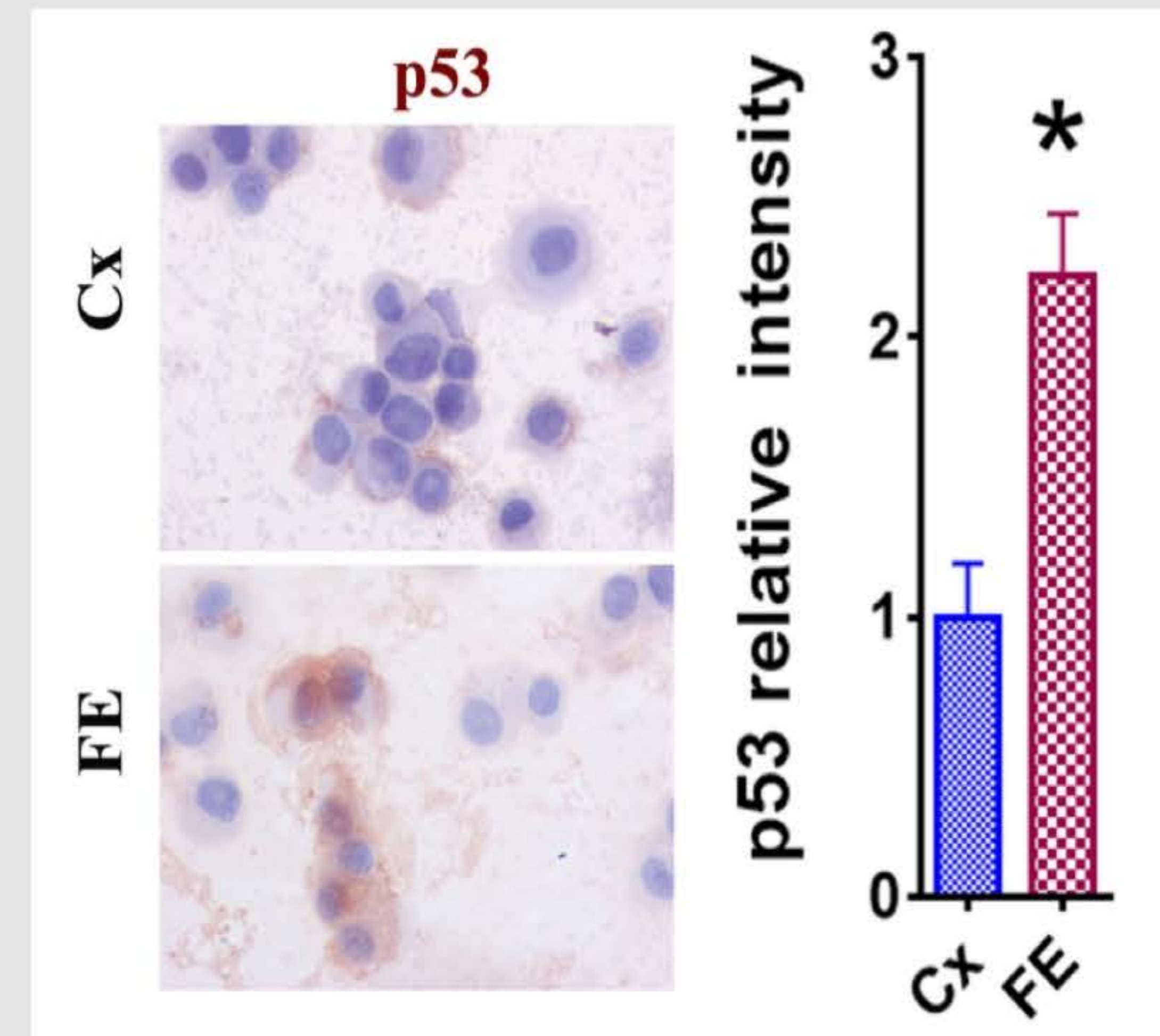
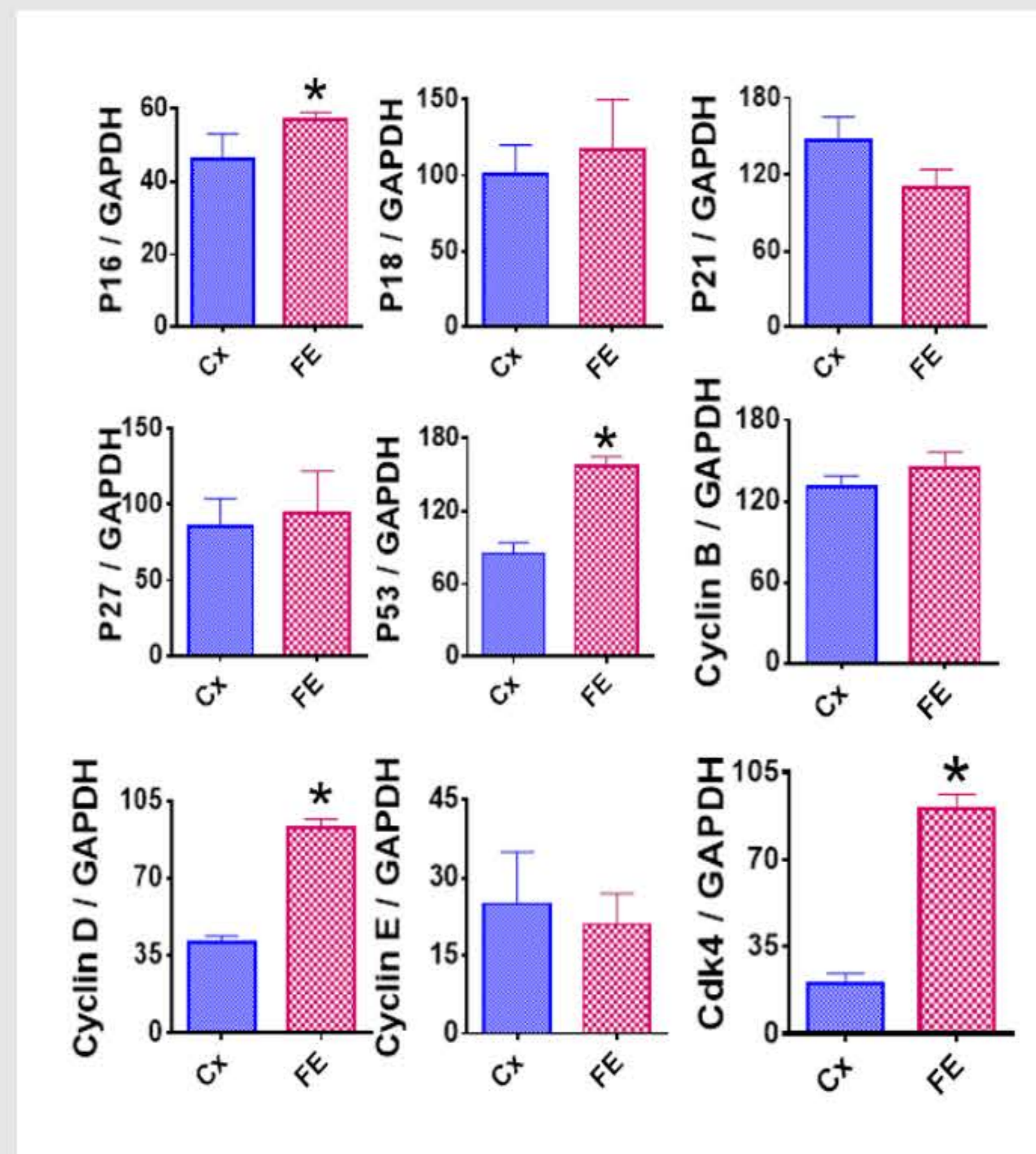
Pancreatic cancer is one of the deadliest cancers. Combinations of chemotherapy and radiotherapy are used in attempts to shrink or prevent further growth of the tumor for late stage patients, but outcomes are overwhelmingly poor. Novel therapies are necessary to improve the treatment of pancreatic cancer. Previous studies have shown that the phytochemicals in fennel decrease the incidence of colon cancer and the multiplicity of breast cancer. However, no studies have explored the effect of fennel on pancreatic cancer. This study investigates the effect of fennel on growth of pancreatic cancer and its possible molecular mechanisms.

Methods

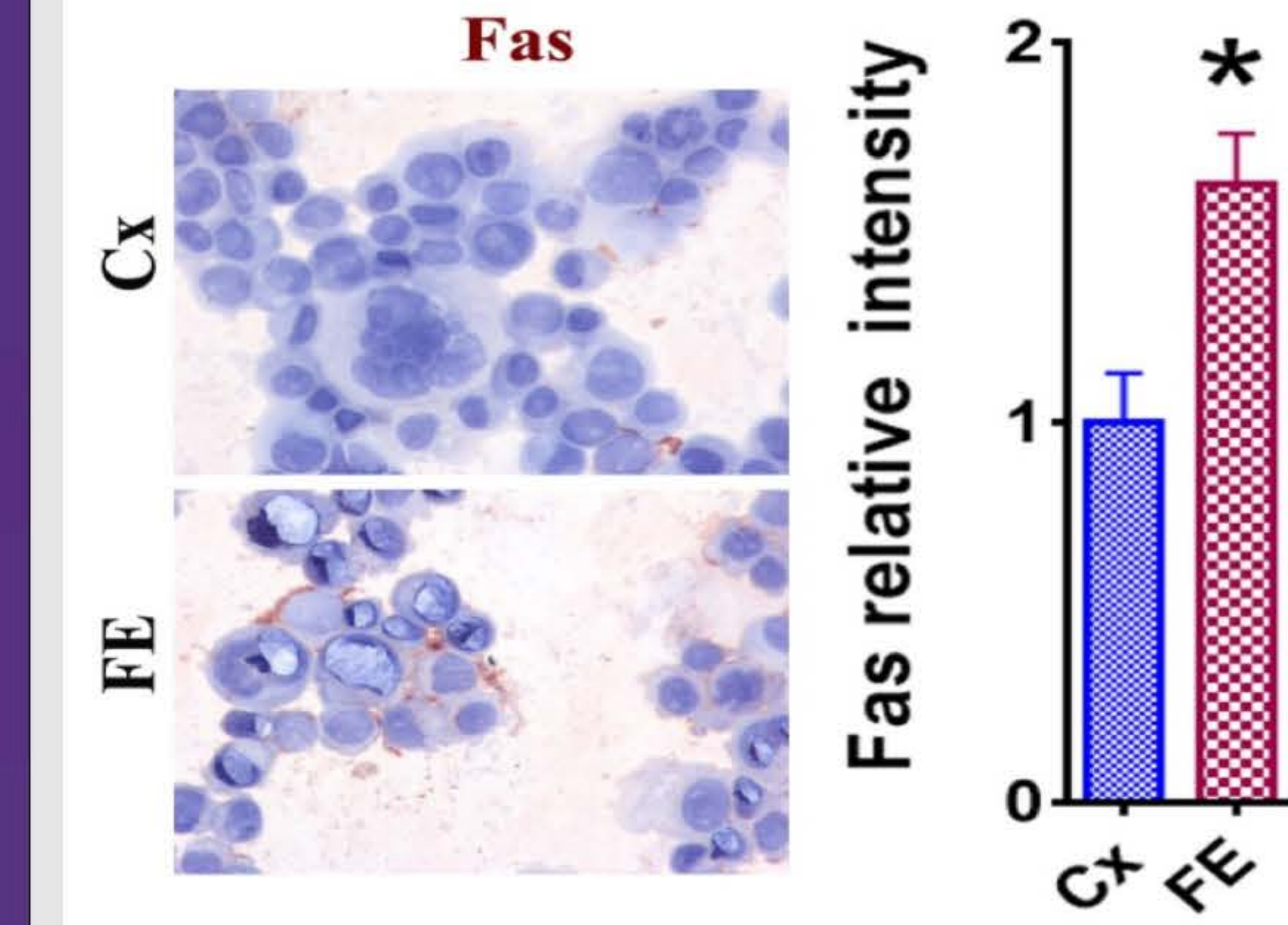
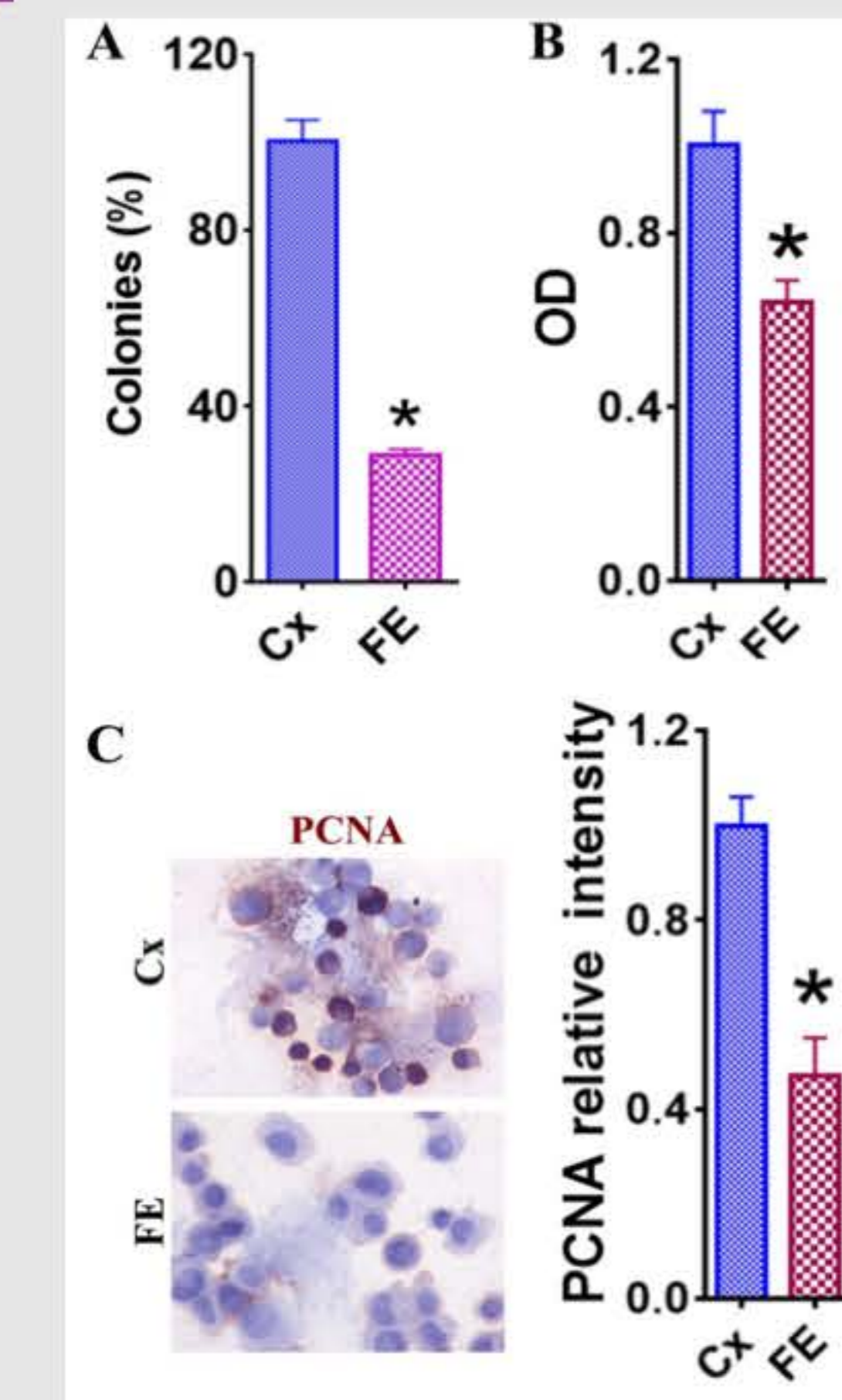
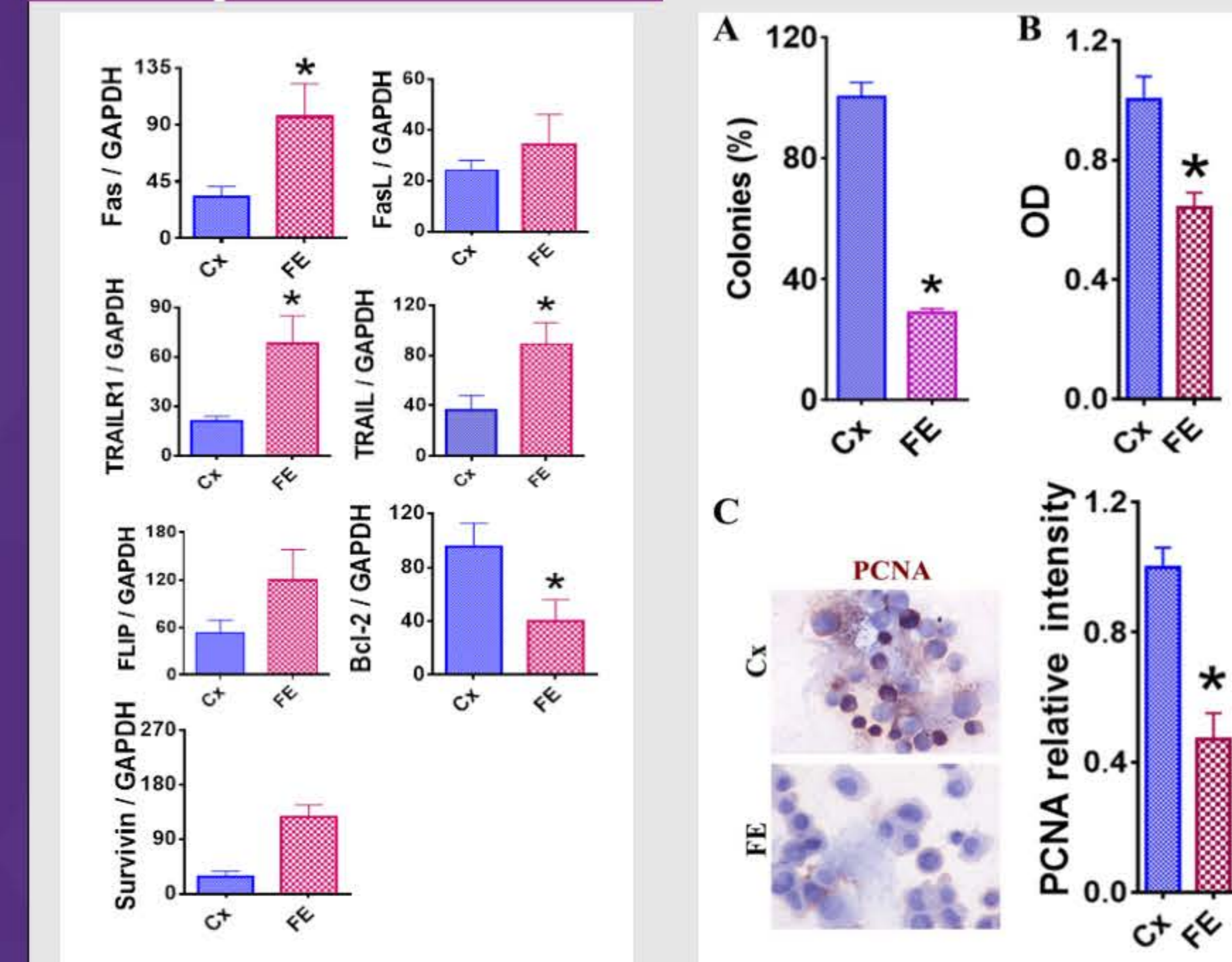
Clonogenic survival assay, cell proliferation, TUNEL staining, and caspase-3 activity kits were used to evaluate the direct effects of fennel seed extract (FE) on cell survival, proliferation, and apoptosis of the widely-studied pancreatic cancer cell line Pan-48. We further investigated possible mechanisms using RT-PCR and IHC.

Results

Pro-apoptosis



Anti-proliferation



Conclusion

Fennel constrains the growth of pancreatic cancer by the inhibition of proliferation and the promotion of apoptosis. Further investigation may provide insight into the mechanisms of these changes, along with the potential for fennel as a powerful natural agent in treating pancreatic cancer.

References

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Acknowledgments

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