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► **To cite this version:**

H Makhloufi, A Pinon, L Gibot-Leclerc, Y Champavier, E Pinault, et al.. Apoptotic agents from the endolichenic fungi against chemoresistant cancers. 6 th AFERP International Symposium, Orsay, Jul 2023, ORSAY, France. hal-04674359

HAL Id: hal-04674359

<https://unilim.hal.science/hal-04674359v1>

Submitted on 26 Aug 2024

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Apoptotic agents from the endolichenic fungi against chemoresistant cancers

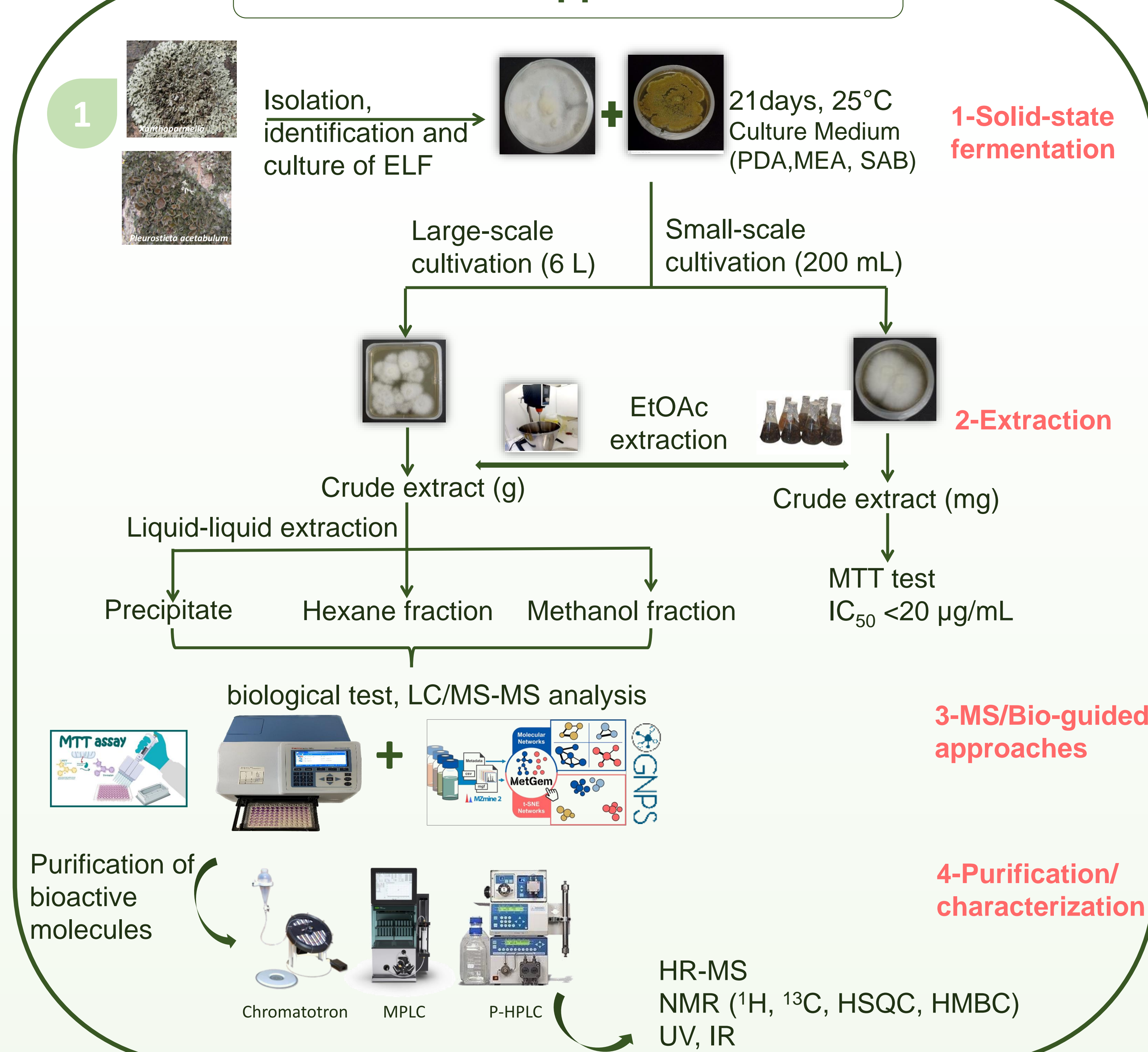
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Introduction

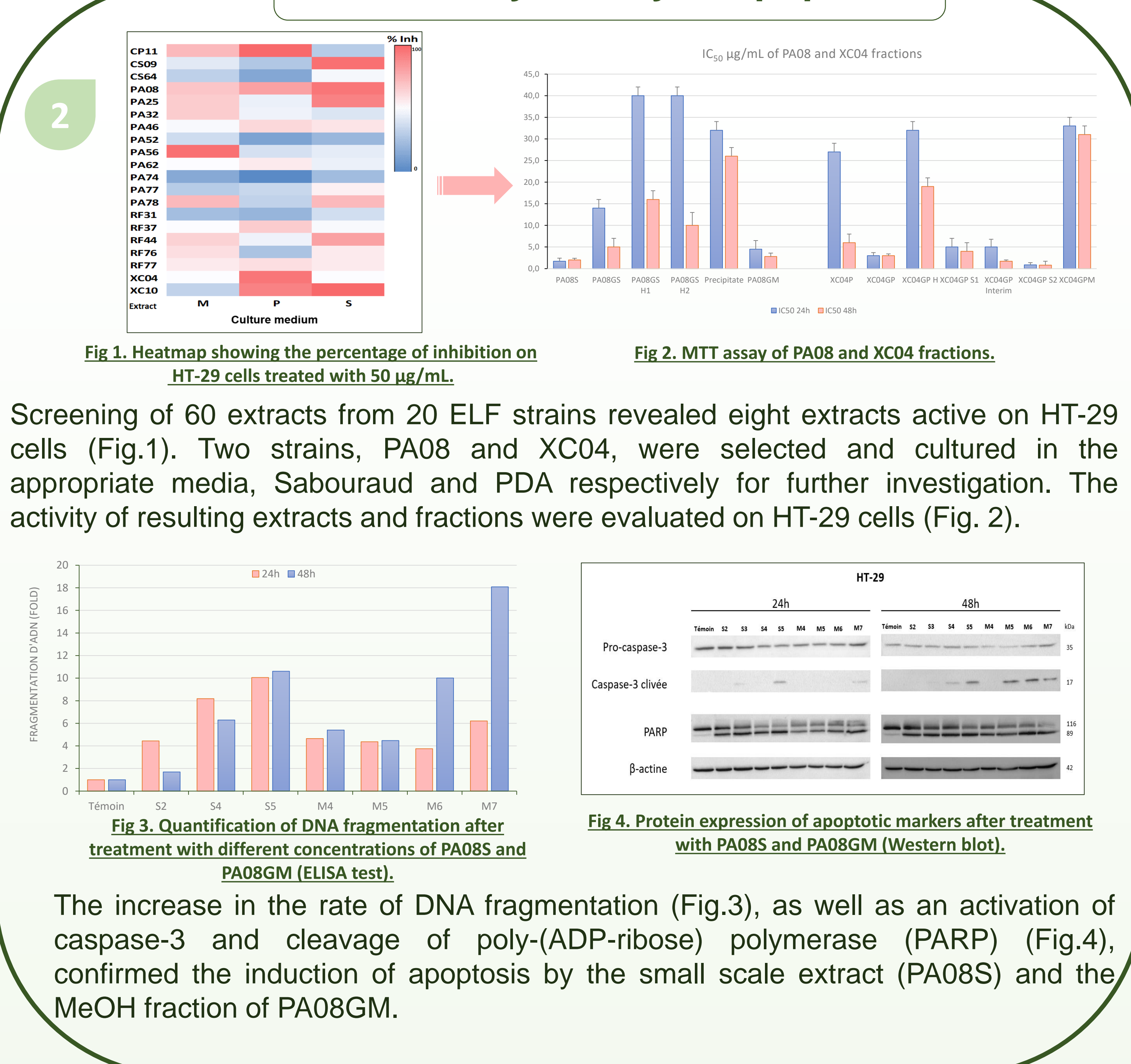
Cancer is a major cause of death worldwide, with breast, lung and colon cancers being the most common. Chemoresistance is also a major obstacle in the treatment of cancer. Hence the importance of researching new treatments to diversify the therapeutic arsenal. Endolichenic fungi (ELF), non-pathogenic fungi located in the thallus of lichens, represent a niche of molecules with diverse biological activities, including antiproliferative activity^{1,2,3}. They offer a promising solution in the search for new bioactive compounds against colon cancer (HT-29) and triple-negative breast cancer (MDA-MB-231).

Methods and results

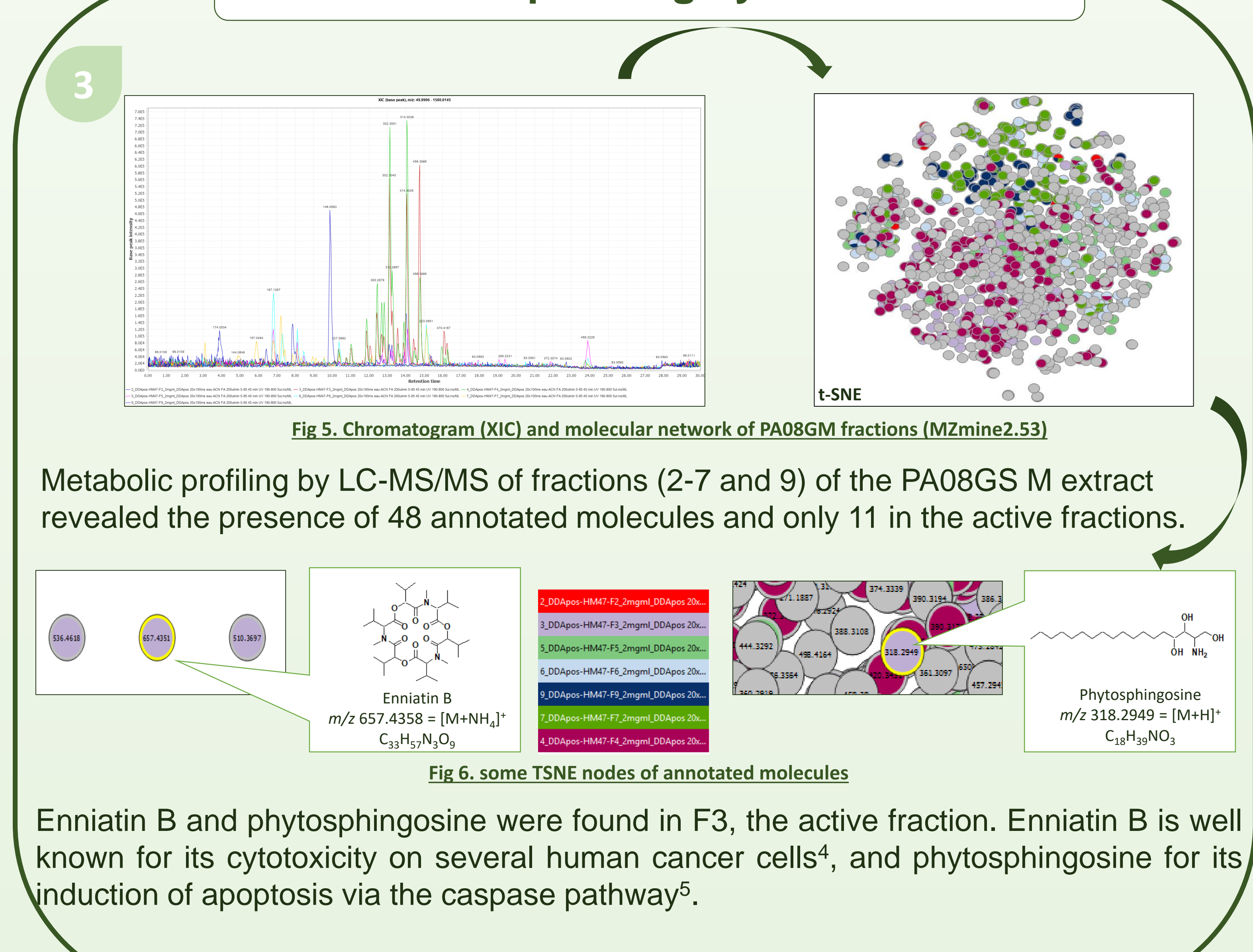
Work approach



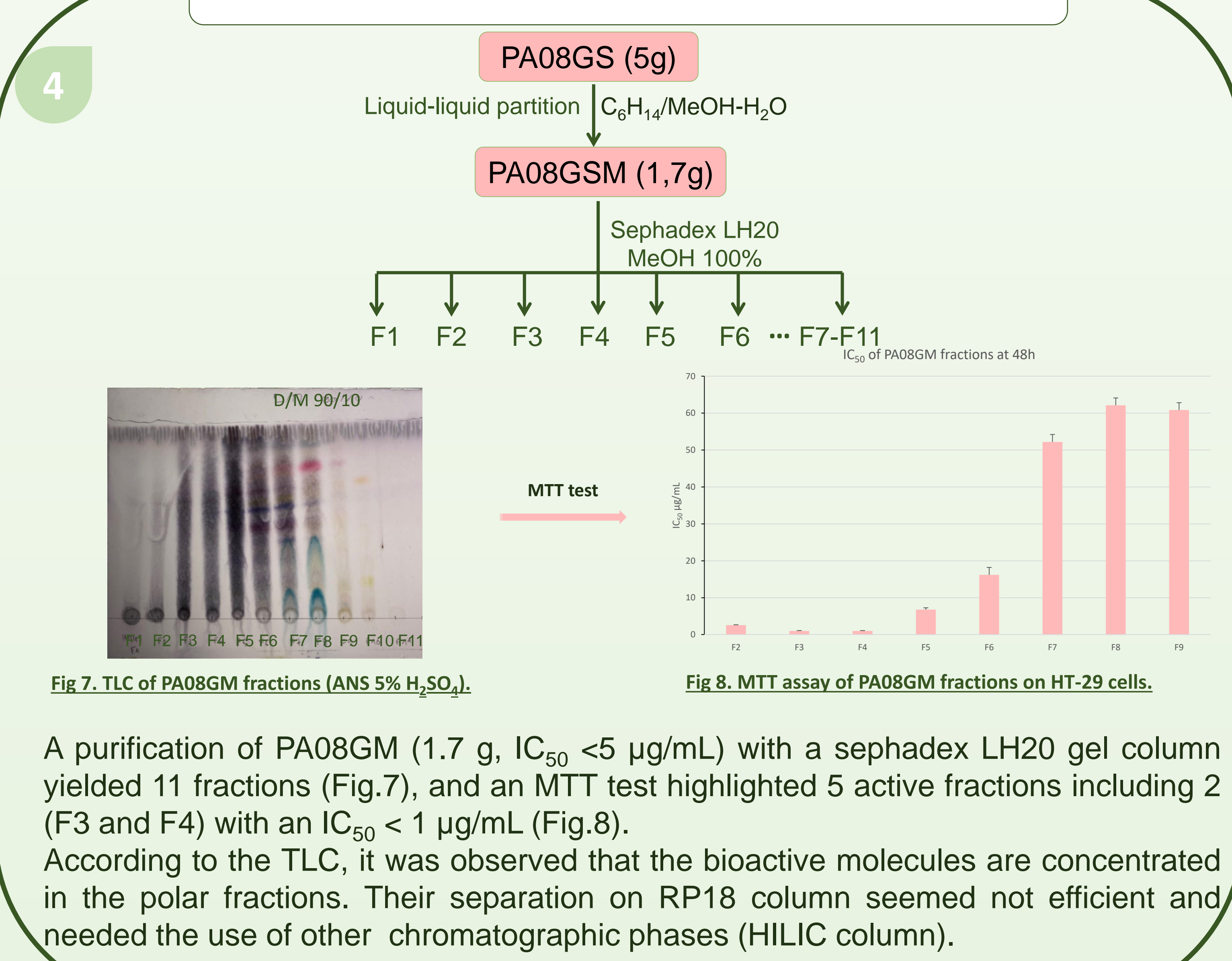
Cell viability / Study of apoptosis



Metabolic profiling by LC/MS-MS



Purification of bioactive molecules



Conclusion

A screening of 60 extracts demonstrated the activity *in vitro* of 8 extracts of 7 strains on the HT-29 cells. The chemical investigation of two selected strains (PA 08 and XC 04) are in progress. The antiproliferative activity of fractions of the PA08GSM extract was evaluated and their involvement in the induction of an apoptotic process was demonstrated. In addition, LC-MS/MS analysis annotated very few known molecules from databases. This work shows that endolichenic fungi are a very interesting source of new molecules with antiproliferative activity which confirm their therapeutic potential.

