

Supplementary Information

Data-driven and knowledge-based analytical valorization of natural products for sustainable and innovative applications

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Supplementary materials can be found at the links listed below. Access is restricted. Access is guaranteed upon request.

Chapter two: Synergy of analytical characterization and biocompatible extractions for the enhancement of high quality biorefinery products from *Medicago sativa*

Link: [10.5281/zenodo.14243728](https://doi.org/10.5281/zenodo.14243728)

Chapter three, subsection one: Exploratory analysis of the in vitro biological effect of *Medicago sativa* biorefinery extracts on colorectal adenocarcinoma cells

Link: [10.5281/zenodo.14243853](https://doi.org/10.5281/zenodo.14243853)

Chapter three, subsection two: Comparative LC-MS proteomics of quinoa grains: evaluation of bioactivity and health benefits by combining *in silico* techniques with *in vitro* assays on colorectal adenocarcinoma cells

Link: [10.5281/zenodo.14243853](https://doi.org/10.5281/zenodo.14243853)

Chapter four: Bridging the gap between off-line and at-line quality monitoring in *Medicago sativa* biorefinery pilot plant

Link: [10.5281/zenodo.12804516](https://doi.org/10.5281/zenodo.12804516)