



Polyphenols, oxidation products & proteins: Towards the food transition

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POLYPHENOLS, OXIDATION PRODUCTS & PROTEINS:

TOWARDS THE FOOD TRANSITION

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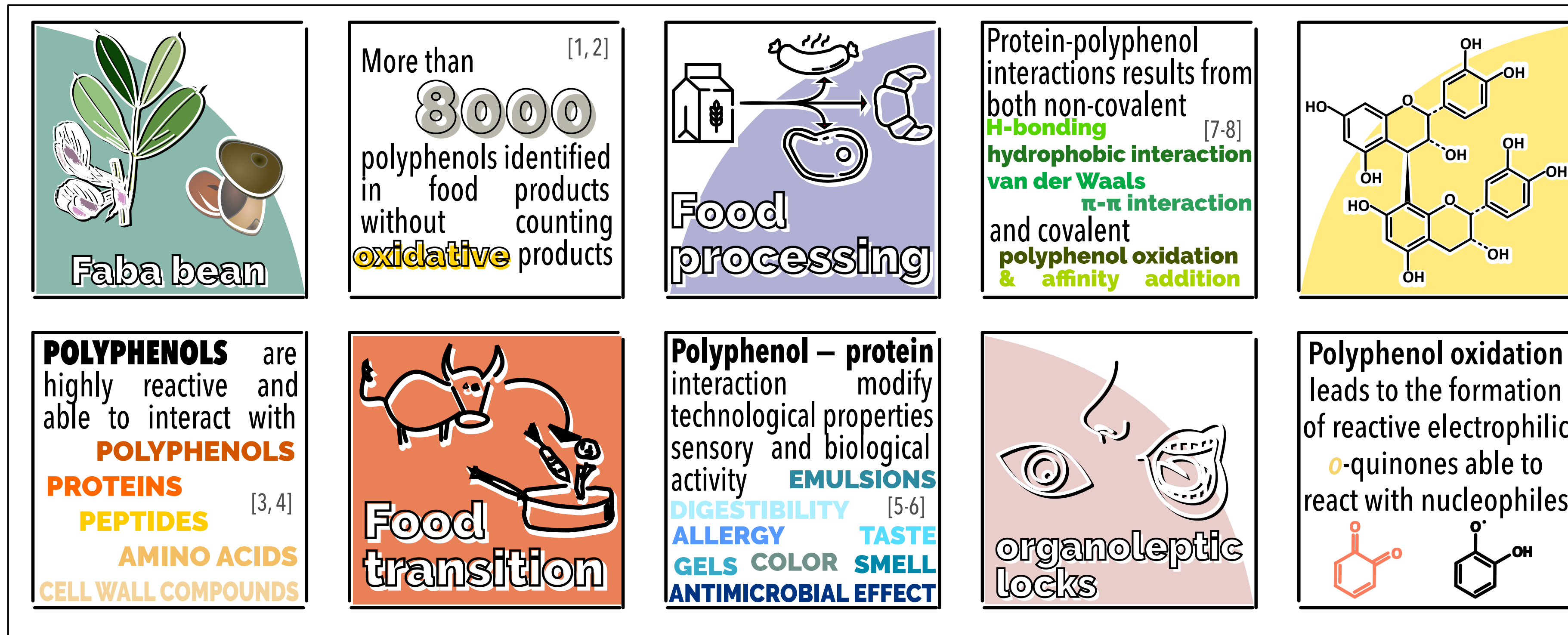
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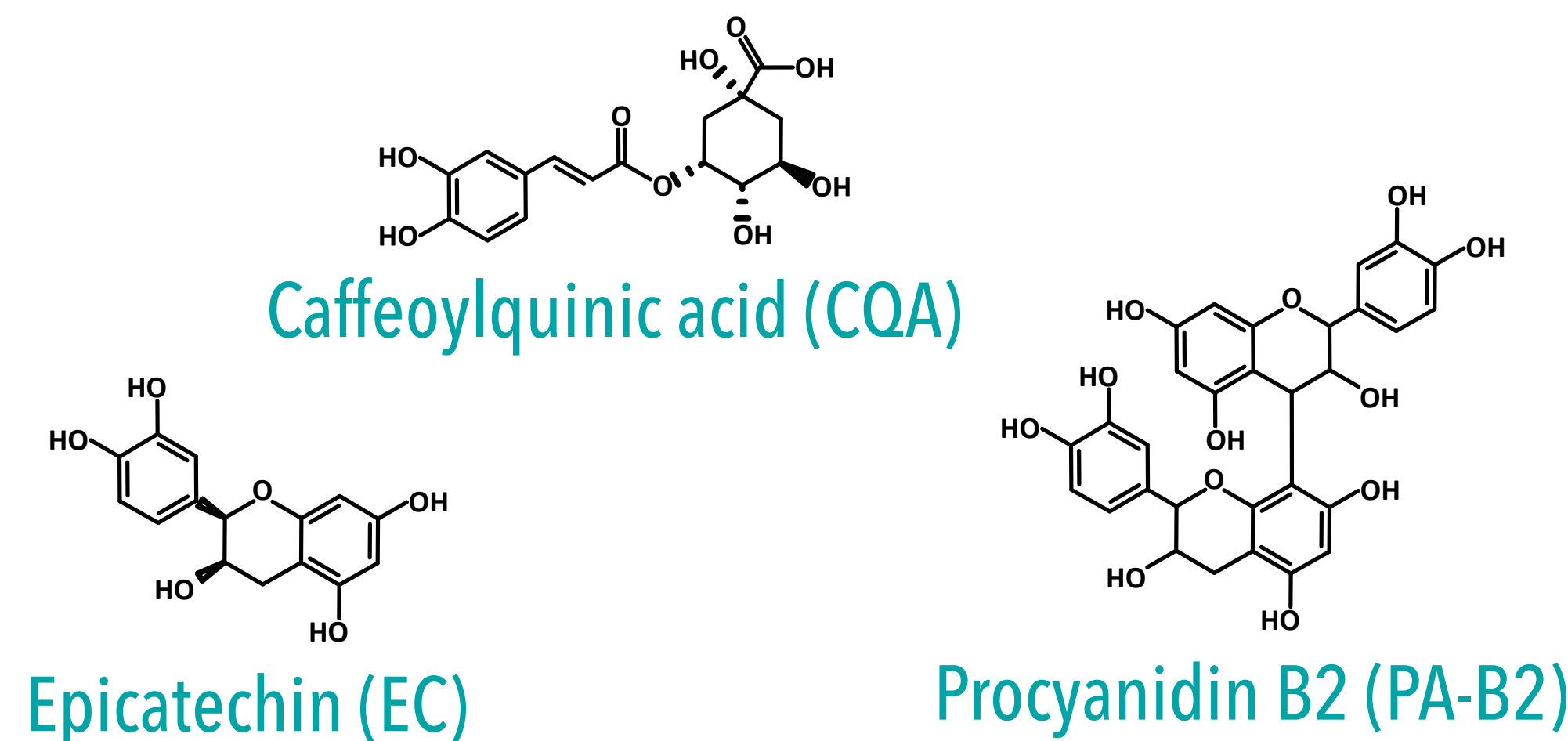
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CHALLENGES



MODEL SOLUTIONS

Pure molecules including condensed tannins

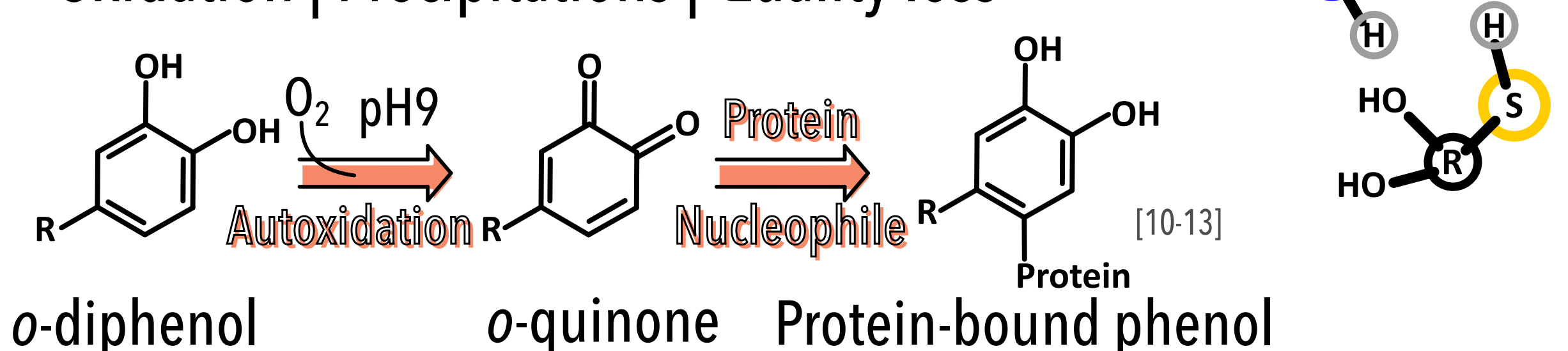


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PROTEIN-POLYPHENOL IN FOOD PROCESS

Milling & alkaline extraction

Oxidation | Precipitations | Quality loss



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OXIDATION EFFECT ON LCMS PROFILES

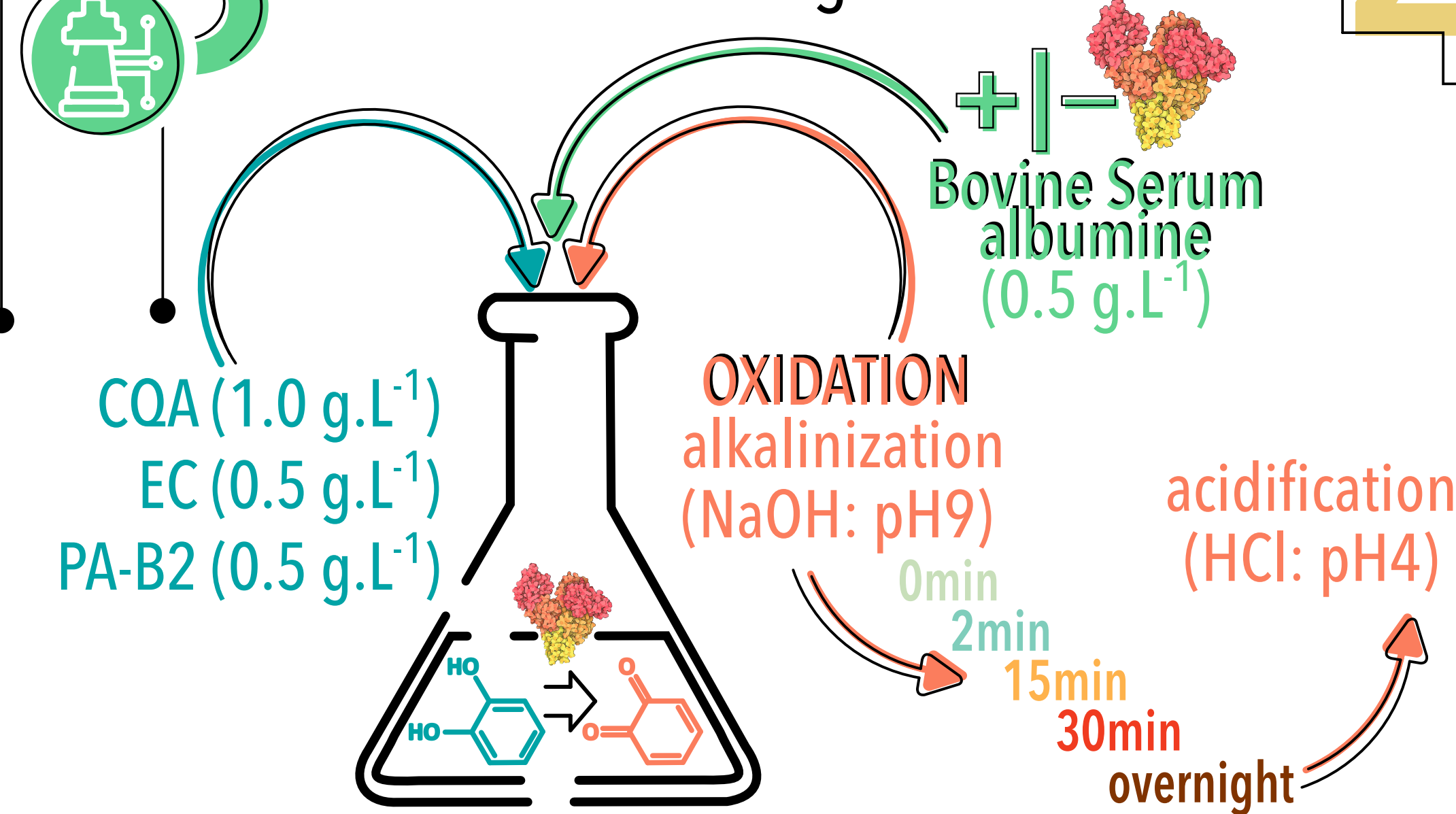
Several relevant molecular signal are detected

oxidation targeted compound \rightarrow oxidation product

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EXPERIMENTAL STRATEGY

Autooxidation through alkalization



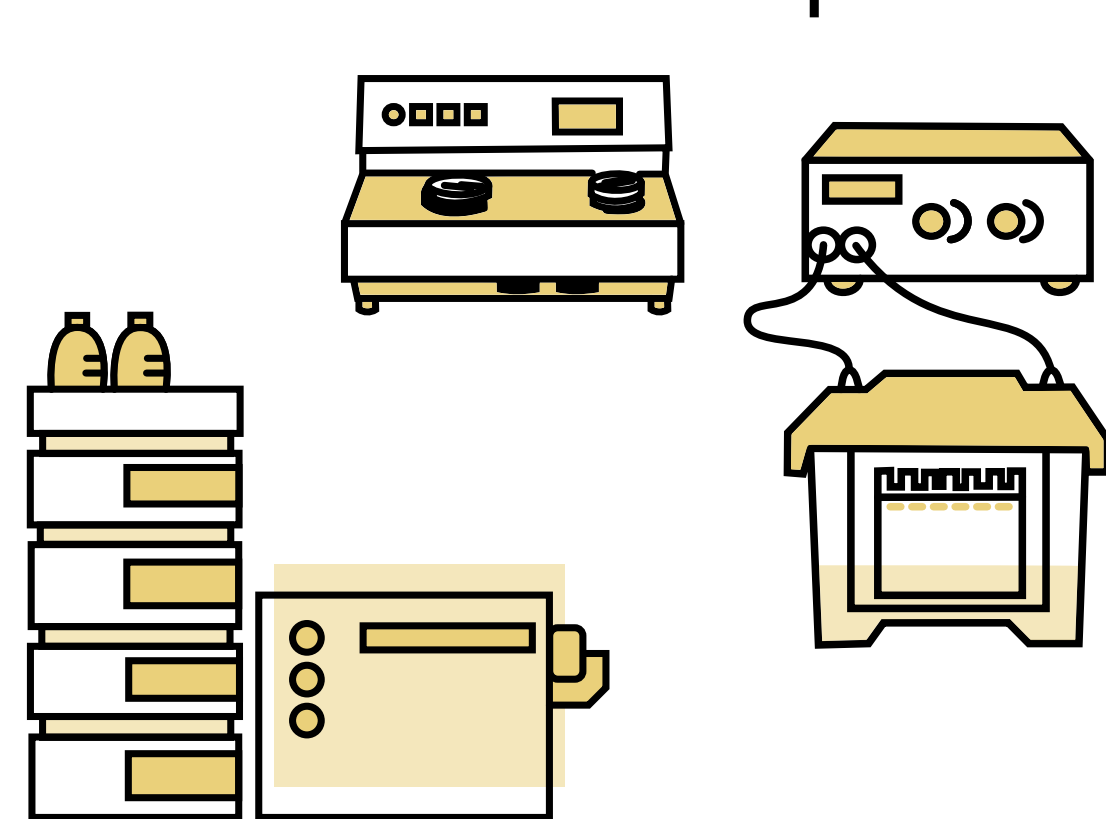
4

DATA ACQUISITION

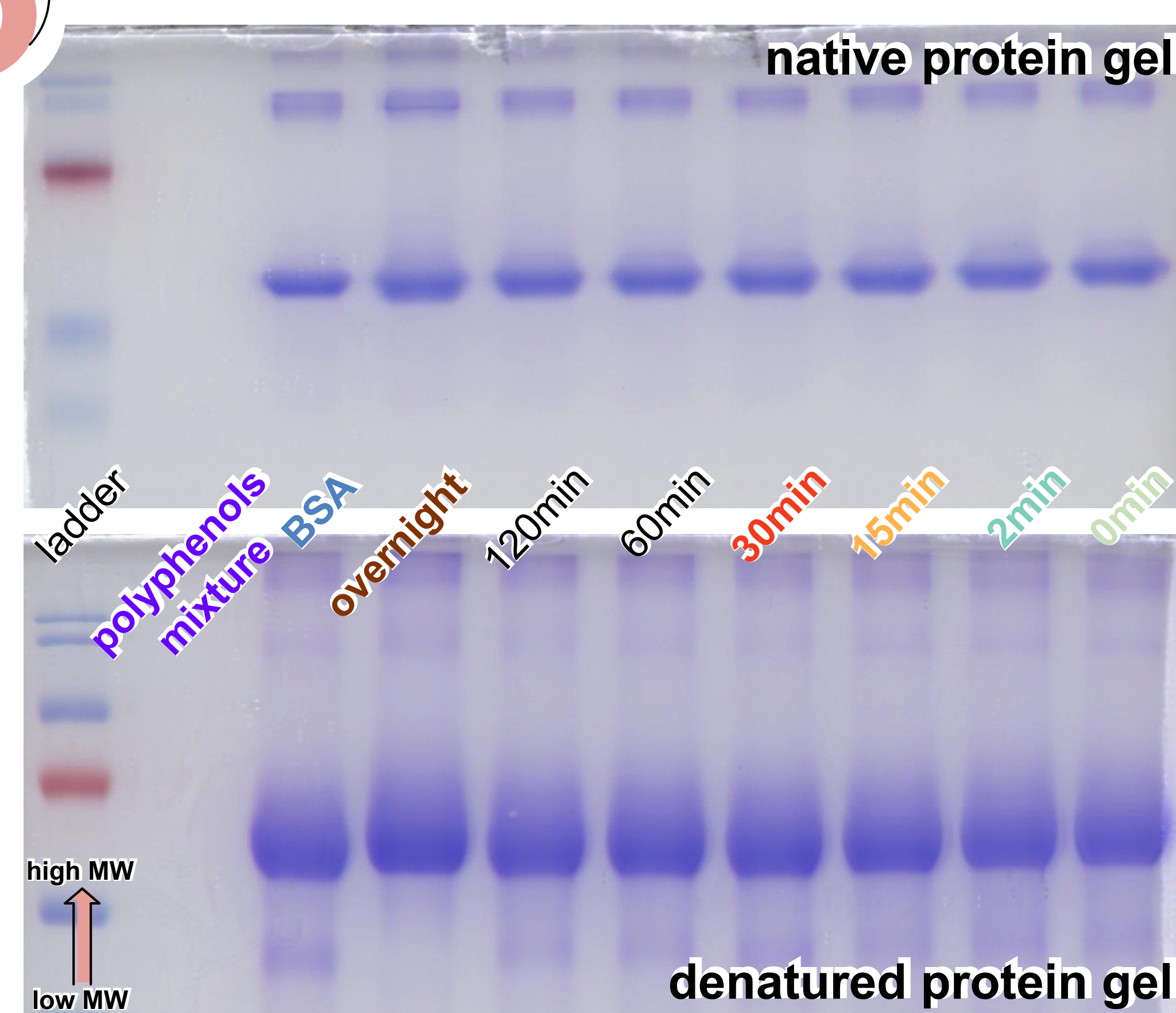
polyphenol profiling: LCMS

interaction study

SDS-PAGE & UV-Vis spectrum



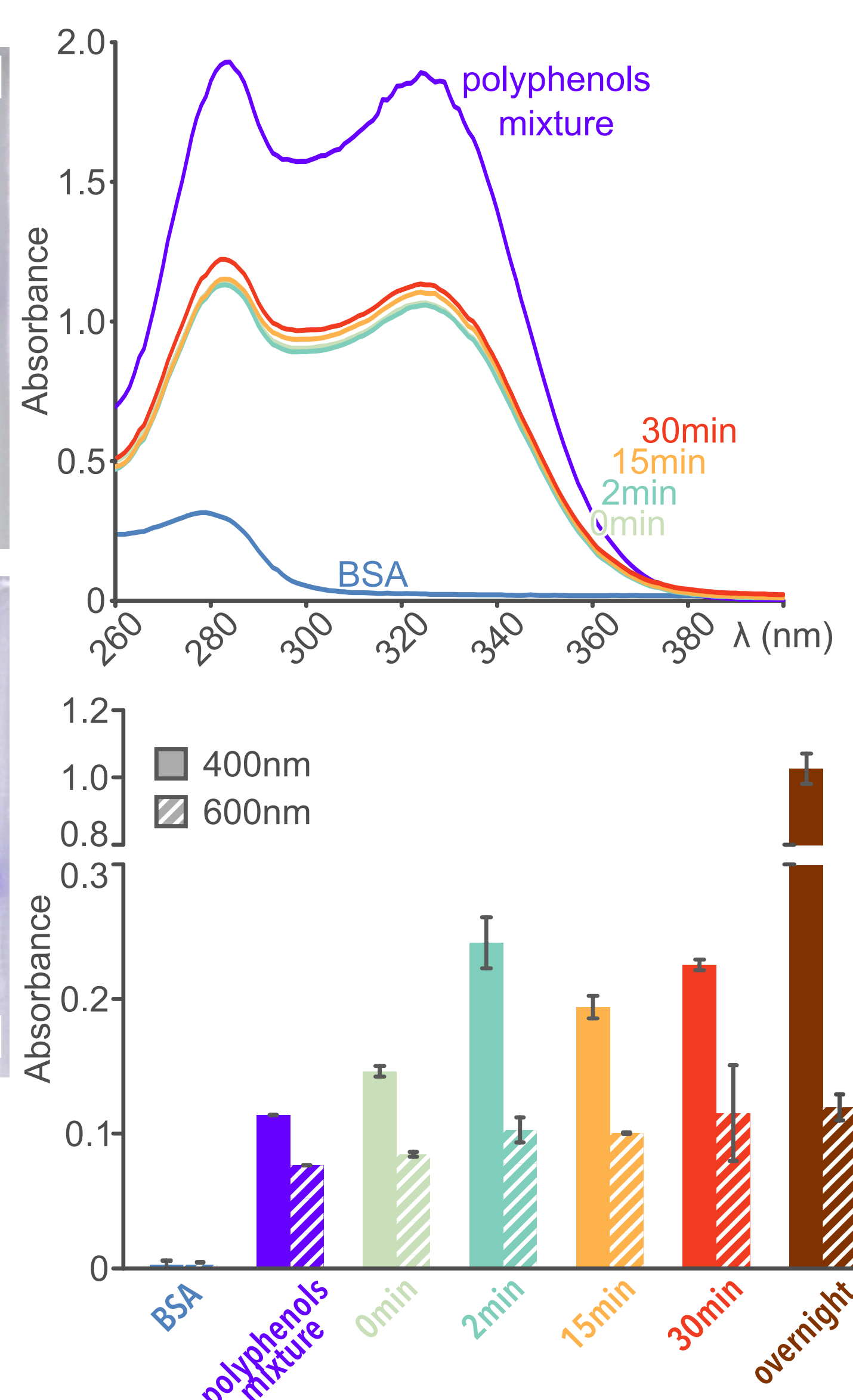
POLYPHENOL OXIDATION & PROTEIN LINKAGE



- The intensity of the polyphenolic UV spectra was highly affected by the interaction with BSA.

- A yellowish color and haze arise with the oxidation level and the interaction with BSA (Abs_{400nm} & Abs_{600nm}).

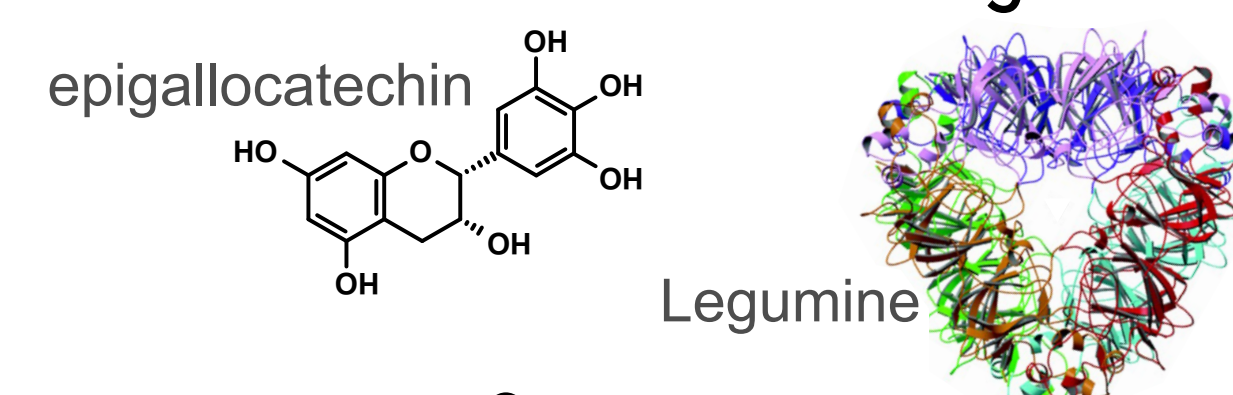
- Gels (native & denatured) revealed that polyphenol-protein crosslinking did not happened



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Perspectives

In the view to focus on compounds that come from a single matrix, it will be interesting to purify Faba bean polyphenols and elucidate their interaction with the legumine



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Bibliography

