

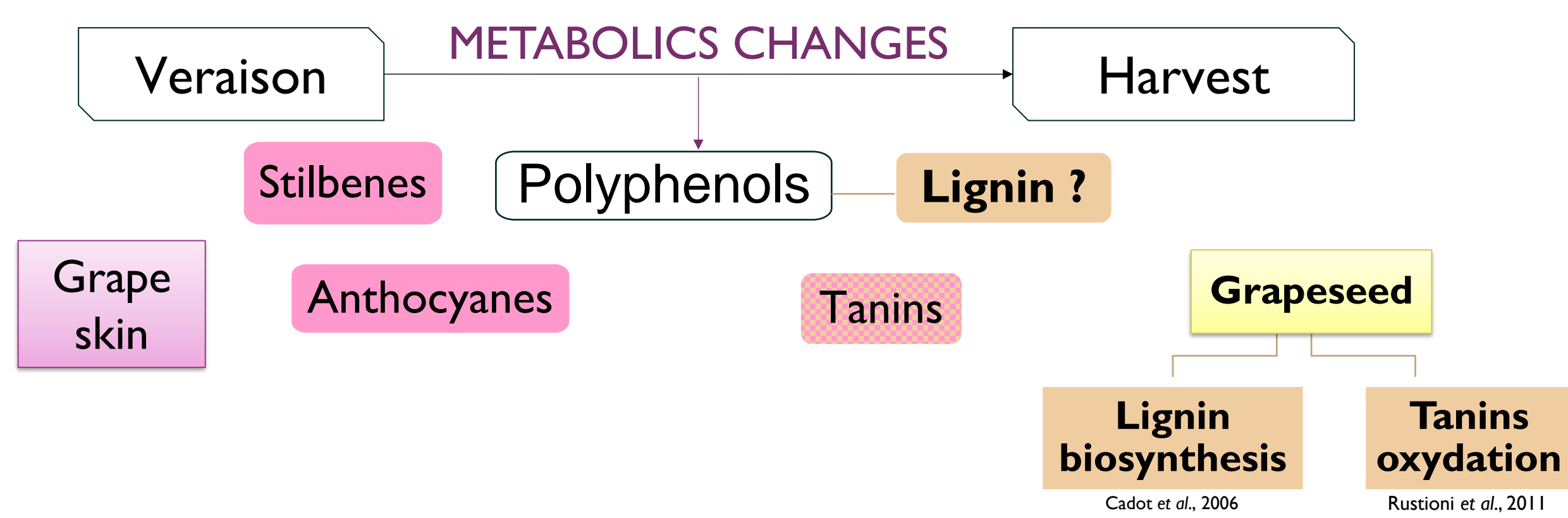
Which lignin is accumulated in grapeseed during maturation ?

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INTRODUCTION

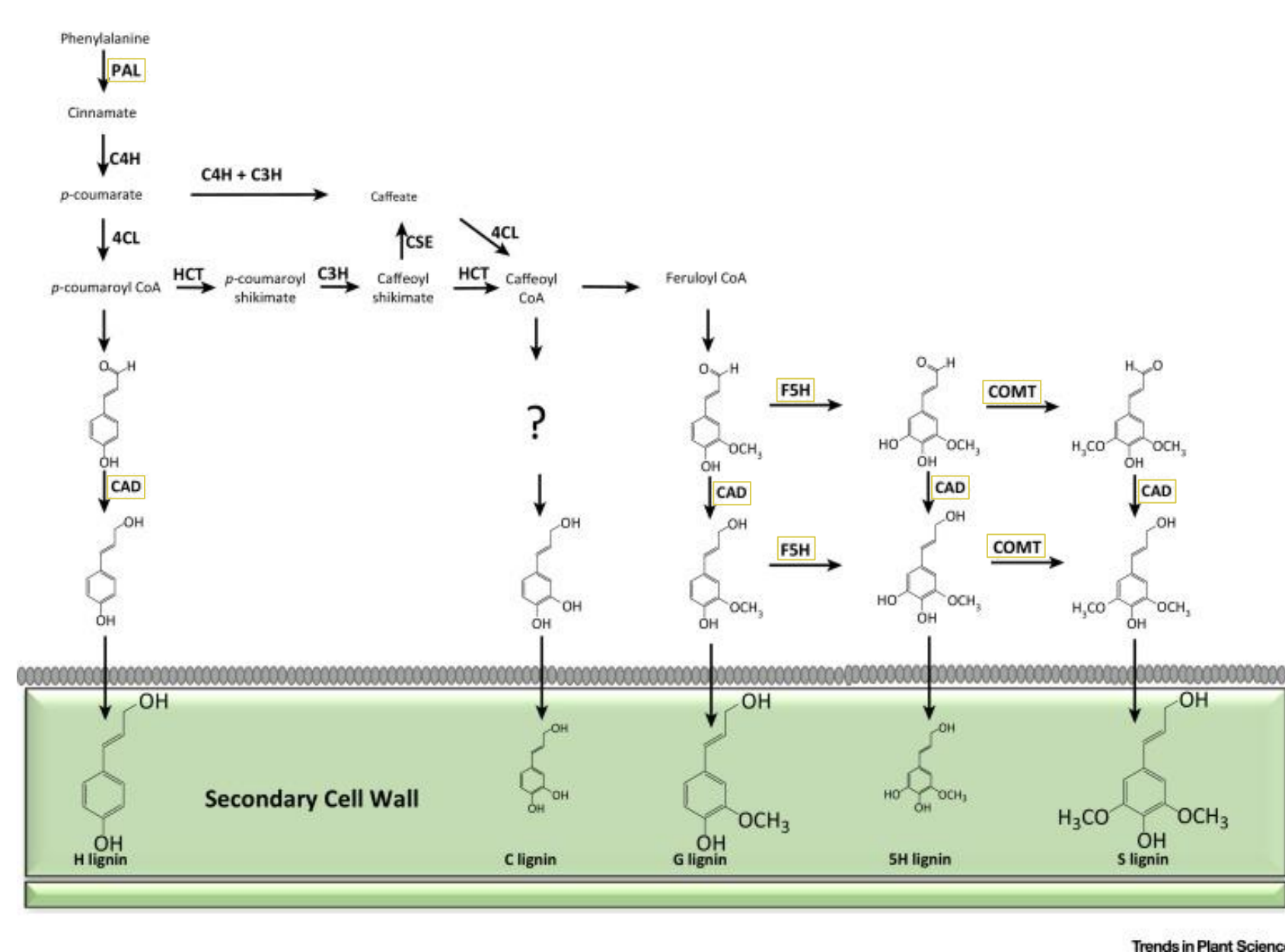
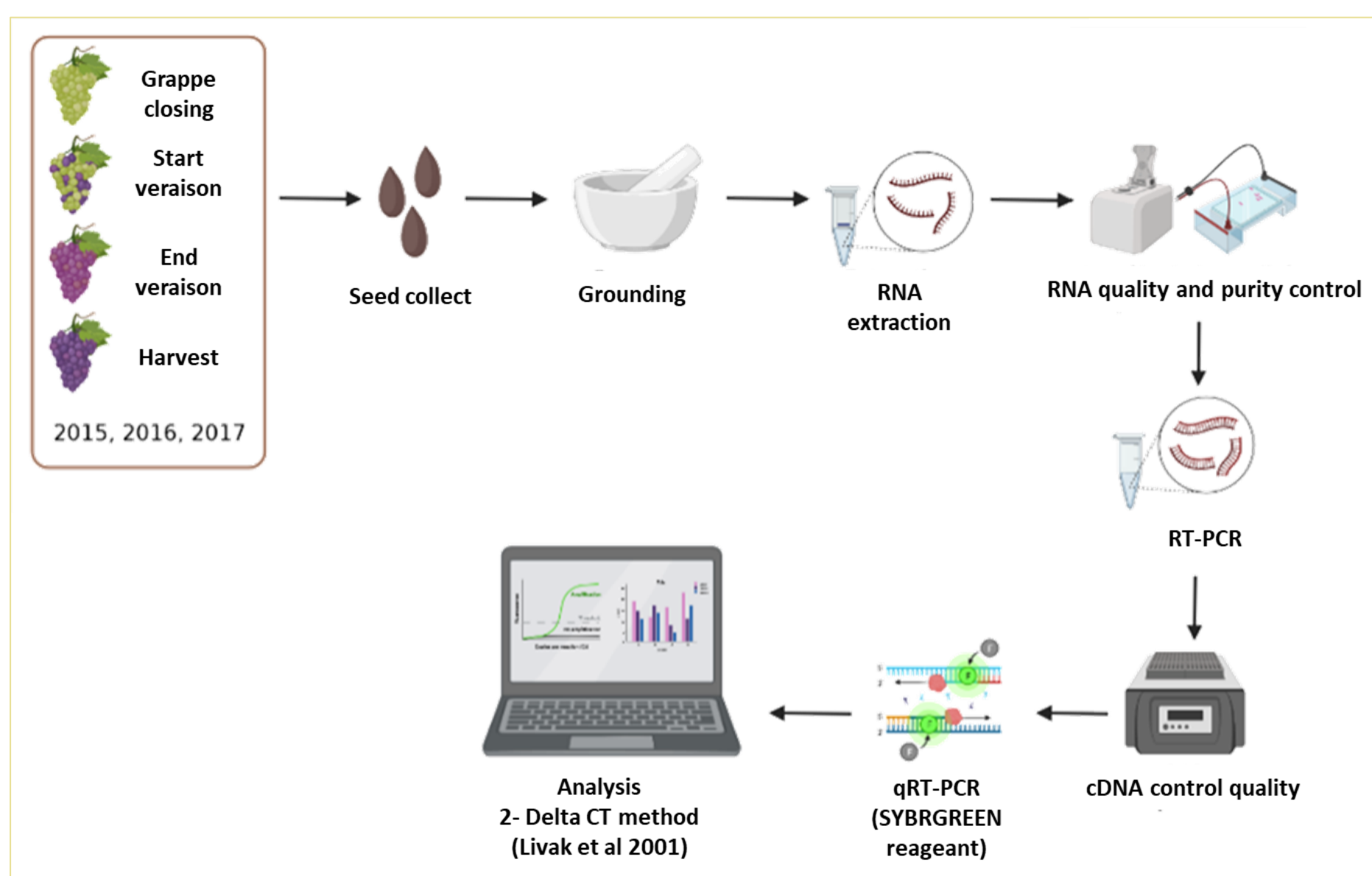
Usually the winemaker consider polyphenols from the grape berry as an actor of the wine quality. There are frequently consider as a marker of grape maturity. It is commonly known that winemaker consider tannins and anthocyanins as main polyphenol actors for winemaking practices and wine quality. Here we will focus on the characterisation of lignins in grape seeds. Previous studies suggest that the seed is lignified, which could explain the change in colour of the seed when it reaches maturity and thus provide a reliable indicator for describing the maturity stage in the seed.



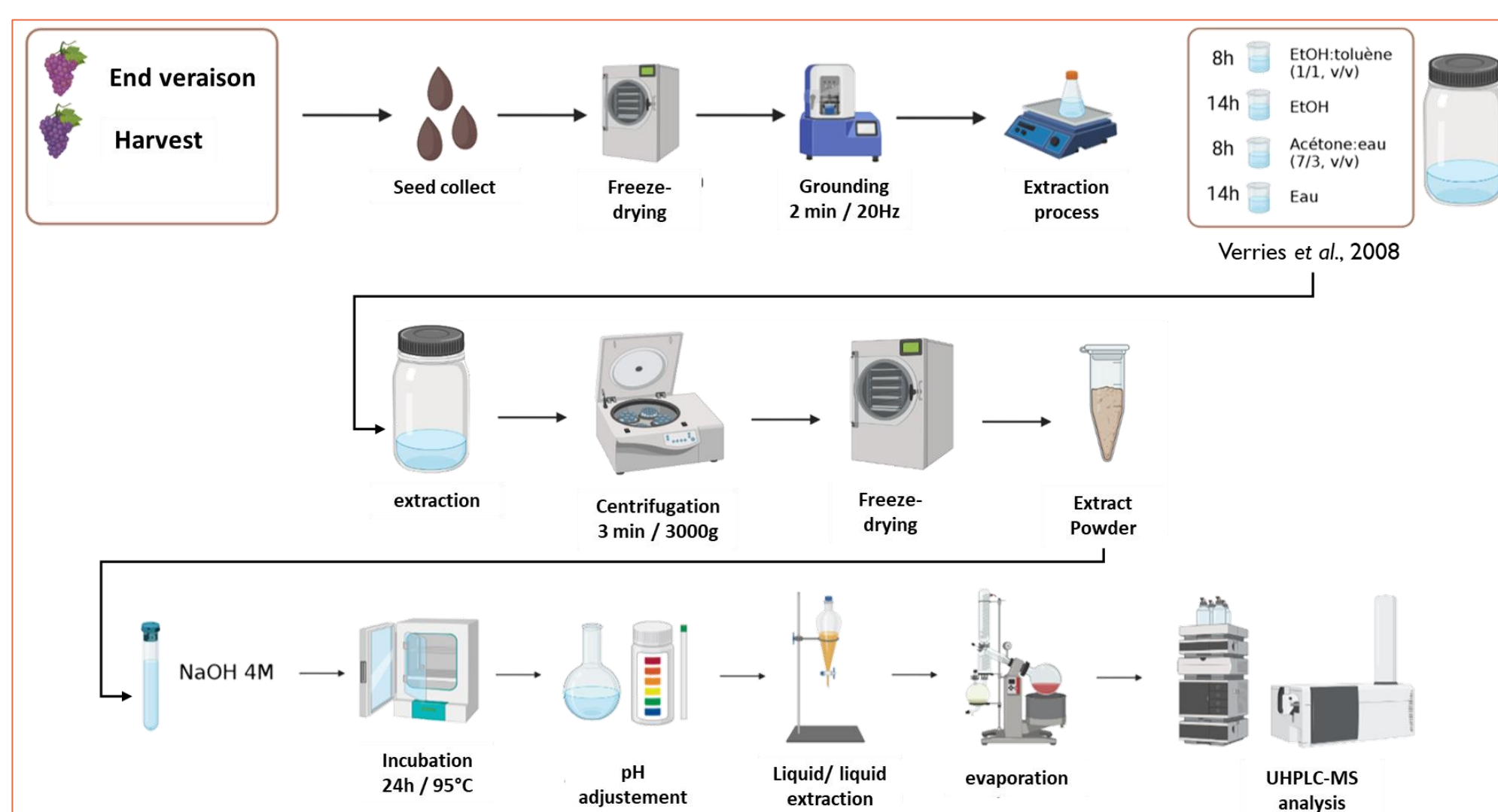
- Does the lignin biosynthesis pathway is working during grapeseed maturation?
- Which pattern of lignin monomers is retrieve in grapeseed ?

METHODS

Lignin biosynthesis pathway study by RT-qPCR

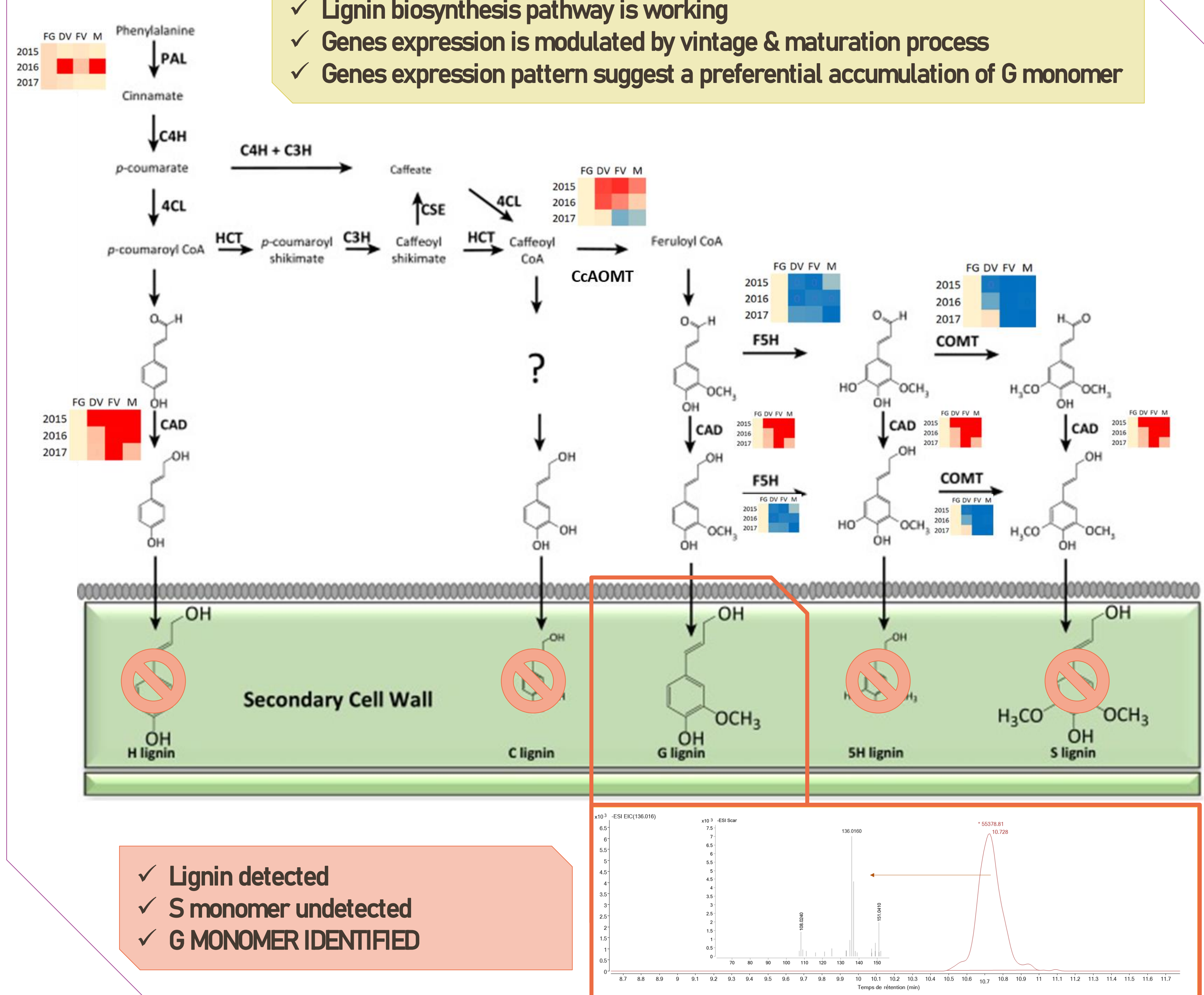


Identification of lignin monomer by chemical study



RESULTS

- ✓ Lignin biosynthesis pathway is working
- ✓ Genes expression is modulated by vintage & maturation process
- ✓ Genes expression pattern suggest a preferential accumulation of G monomer



- ✓ Lignin detected
- ✓ S monomer undetected
- ✓ G MONOMER IDENTIFIED

CONCLUSION

This study was the first to demonstrate the presence of lignin in grape seeds. As a reminder, the initial issues were (i) whether the biosynthesis pathway is functional in the seed during ripening, which was confirmed by biochemical analysis, and (ii) whether there are monomers preferentially formed in the seed. On this point, the results obtained from the chemical analysis corroborate those obtained from the biochemical analysis, since gene expression implied the synthesis of G units to the detriment of S units, and no G units could be detected. Further studies are required to extend these results. Enzymatic analysis has to be done, which may or may not validate the hypothesis made concerning the biosynthesis of the F5H and COMT enzymes. Biochemical analysis has shown a significant vintage effect on the biosynthesis pathway, and it would therefore be interesting to study its impact on the chemical composition of the seed, in particular the quantity of G

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