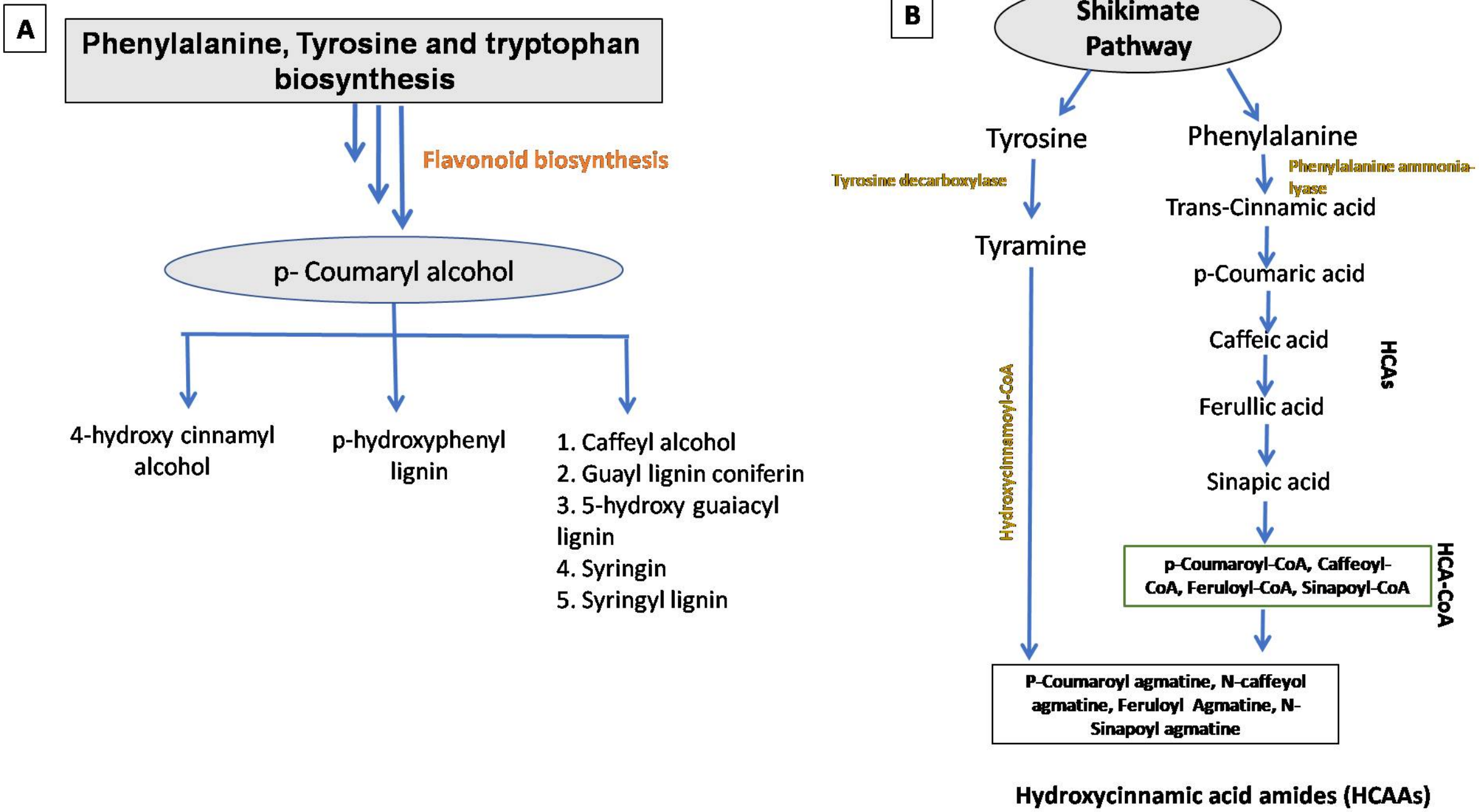

A
Phenylalanine, Tyrosine and tryptophan biosynthesis
Flavonoid biosynthesis
p- Coumaryl alcohol
4-hydroxy cinnamyl alcohol
p-hydroxyphenyl lignin
1. Caffeyl alcohol
2. Guayl lignin coniferin
3. 5-hydroxy guaiacyl lignin
4. Syringin
5. Syringyl lignin
B
Shikimate Pathway
Tyrosine
Phenylalanine
Tyrosine decarboxylase
Phenylalanine ammonia-lyase
Trans-Cinnamic acid
Tyramine
p-Coumaric acid
Caffeic acid
HCAs
Ferullic acid
Sinapic acid
Hydroxycinnamoyl-CoA
p-Coumaroyl-CoA, Caffeoyl-CoA, Feruloyl-CoA, Sinapoyl-CoA
HCA-CoA
P-Coumaroyl agmatine, N-caffeyol agmatine, Feruloyl Agmatine, N-Sinapoyl agmatine
Hydroxycinnamic acid amides (HCAAs)