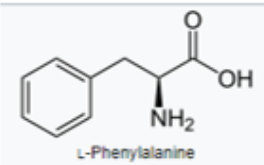
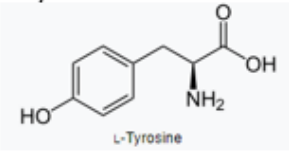
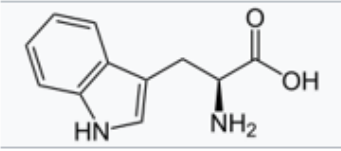
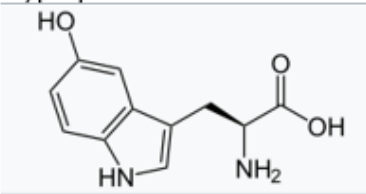
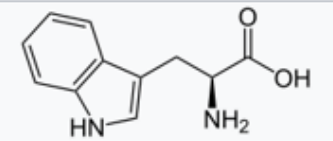
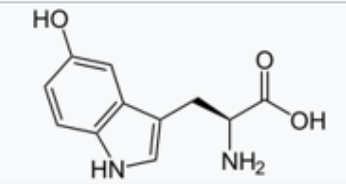
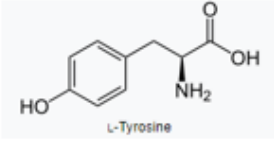
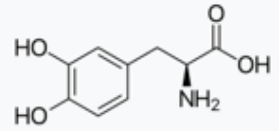


**TABLE 1. UNIPROT INFORMATION**

Accession number	P00439	Q8IWU9	P17752	P07101
Protein	Phenylalanine-4-hydroxylase	<b>Tryptophan 5 hydroxylase 2</b>	Tryptophan 5-hydroxylase 1	Tyrosine 3 <u>monooxygenase</u>
Gene	PAH	<b>TPH2</b>	TPH1	TH
Organism	<i>Homo sapiens</i>	<i>Homo sapiens</i>	<i>Homo sapiens (Human)</i>	<i>Homo sapiens</i>
Catalytic reaction: substrate and product <sup>1</sup>	Substrate: L-phenylalanine  Product: L-Tyrosine 	Substrate: L-tryptophan  Product: 5-hydroxy-L-tryptophan 	Substrates: L-tryptophan  Products: 5-hydroxy-L-tryptophan 	Substrate: L-tyrosine  Product: L-Dopa 
GO – molecular function (top 3)	(1) iron ion binding  (2) phenylalanine 4-monooxygenase activity	1. iron ion binding tryptophan 5-monooxygenase activity	1. Iron ion binding Tryptophan 5-monooxygenase activity	amino acid binding, dopamine <u>binding</u> , enzyme binding
PFAM codes <sup>2</sup>	<a href="#">PF01842</a> <a href="#">PF00351</a>	<a href="#">PF00351</a>	<a href="#">PF00351</a>	<a href="#">PF00351</a> <a href="#">PF12549</a>

Are these enzymes evolutionary related?