Supplementary information

Tryptophan, a noncanonical melanin precursor: New L-tryptophan based melanin production by *Rubrivivax benzoatilyticus* JA2

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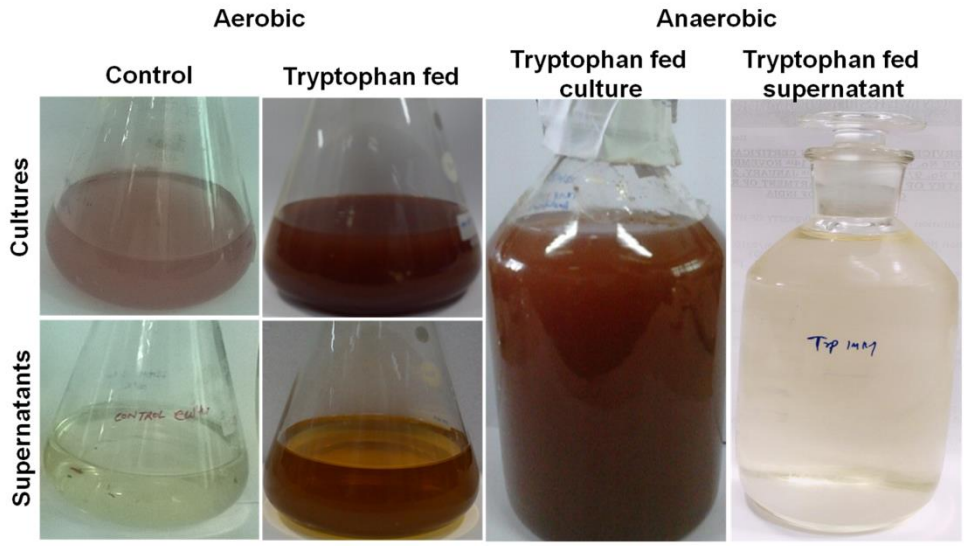
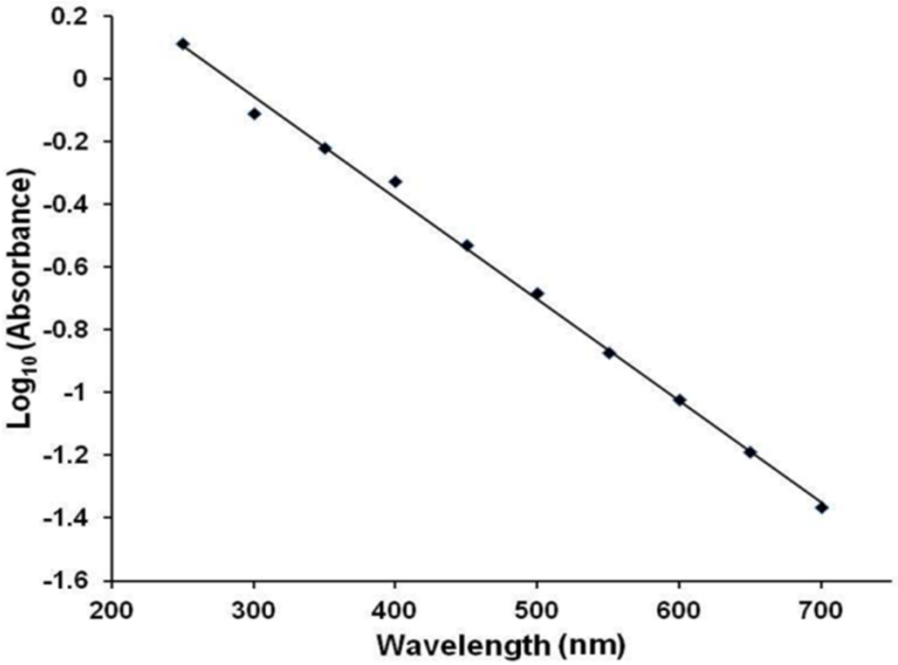
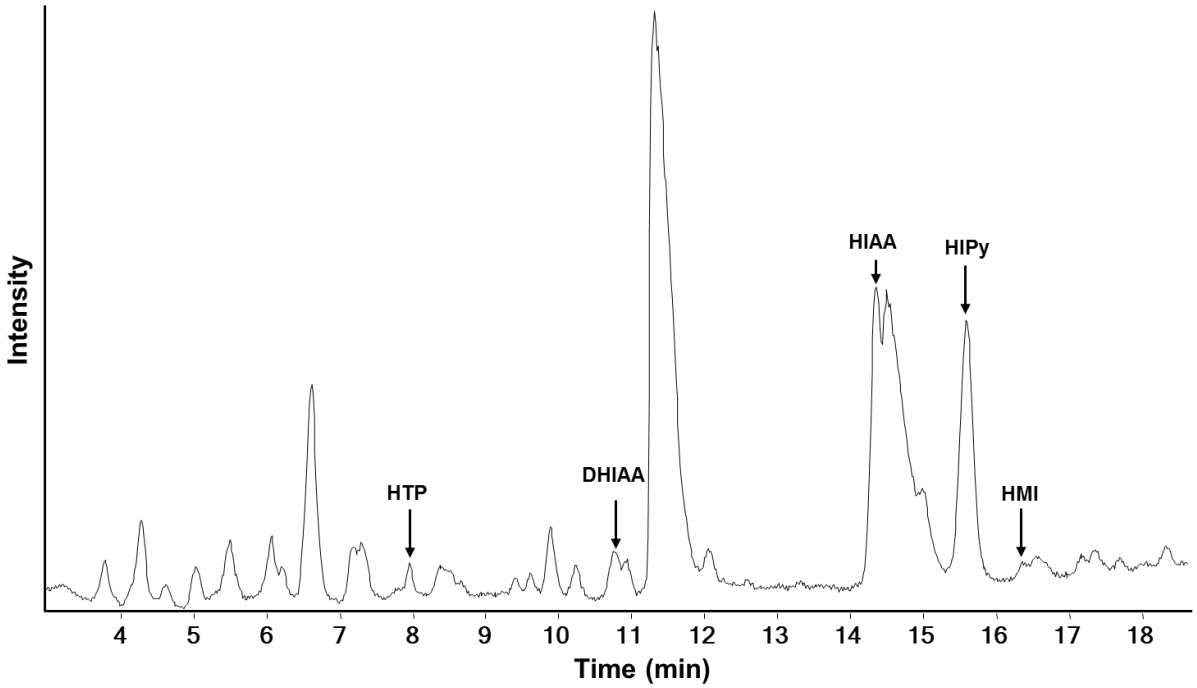
Supplementary information Figures



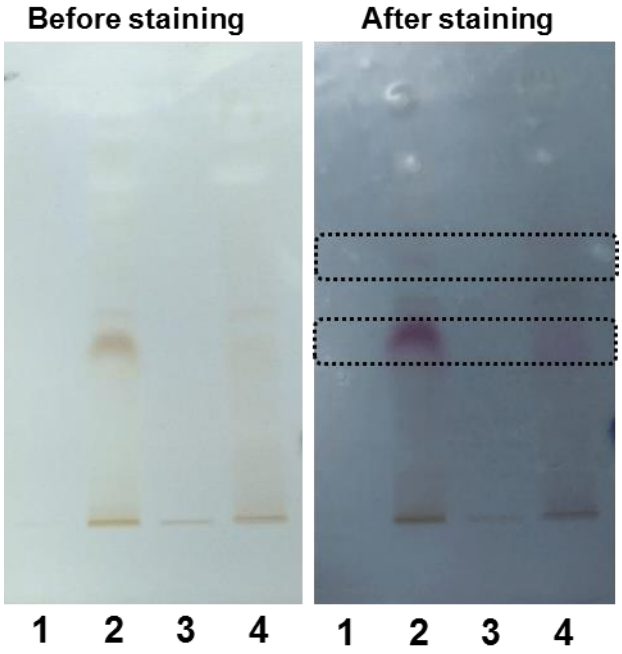
Supporting Information Figure. S1 : Brown pigment production by strain JA2**.** Control (without tryptophan) and tryptophan-amended cultures and respective supernatants of strain JA2 under anaerobic and aerobic growth conditions



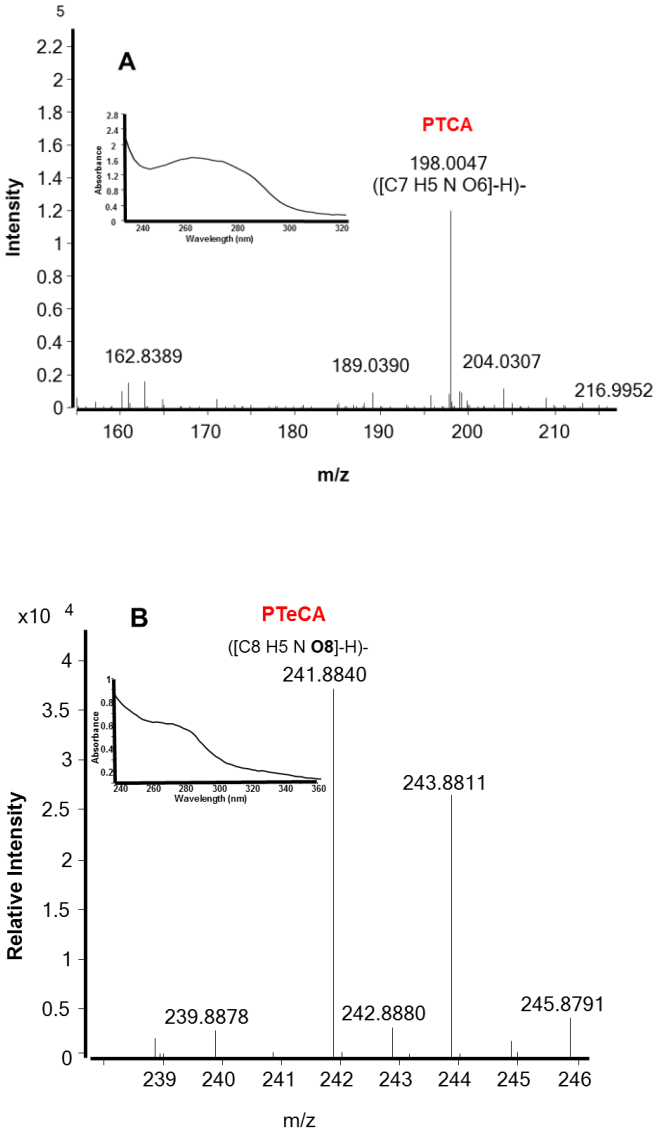
Supporting Information Figure. S2: Linear regression coefficient curve of absorbance vs wavelength of purified brown pigment produced by strain JA2



Supporting Information Figure. S3: Total Ion Chromatogram of methanolic extract of tryptophan-amended aerobic culture supernatant of strain JA2. HTP, 5-Hydroxytryptophan; DHIAA, 5,6-dihydroxyindole-3-acetic acid; HIAA, 5-hydroxyindole-3-acetic acid; HIPy, 5-hydroxyindole-3-pyruvic acid; HMI, 5-hydroxymethyl indole.



Supporting Information Figure. S4: TLC analysis of hydrolyzed brown pigment products of tryptophan and hydroxytryptophan. Lane-1 and 3: un-hydrolyzed Trp, OH-trp fraction, Lane 2 and 4 hydrolyzed products of Trp and OH-Trp. Rectangular boxes showing the indole positive staining (purple bands



Supporting information Figure S5: Mass spectrum of PTCA (A) and PTeCA showing molecular ion mass of 198 and 241 [M-1] and their corresponding UV spectrum as insert. PTCA, pyrrole-2,3,5-tricaroboxylic acid; PTeCA, pyrrole-2,3,4,5-tetracarboxylic acid.

Supporting Information table. S1: Physicochemical properties of purified brown pigment

	Chemical nature	**Result**
1.	Solubility	
	Organic solvent	Insoluble
	(a) Ethanol	Insoluble
	(b) Chloroform	Insoluble
	(c) Acetone	Insoluble
	(d) Benzene	Insoluble
	(e) Ethyl acetate	Insoluble
	Alkaline solution	
	1M NaOH /KOH	Soluble
	Buffers	
	50 mM phosphate buffer pH 7	Insoluble
	50 mM Sodium bicarbonate buffer pH 10	Partially soluble
	50 mM dipotassium hydrogen phosphate buffer pH 12	Partially soluble
	Water	Insoluble
(2)	Colour	Dark brown
(3)	Reaction with 3M HCl	Precipitated
(4)	Reaction with oxidizing agent such as H_2O_2 and NaOCl	Decolorized (black to colorless)
(5)	Reaction of polyphenol with $FeCl_3$	Formed flocculent brown precipitate
(6)	Reaction with $Na_2S_2O_4$ and potassium ferricyanide	Decolorized first turned brown with addition potassium ferricyanide
(7)	Reaction with ammonical silver nitrate	Formed a grey coloured silver precipitate (reduced) lining on the test tube