## ARGININE AND PROLINE METABOLISM N2-Succinyl-N2-Succinyl-L-glutamate 5-semialdehyde N2-Succinyl-L-omithine Glutamate glutamate Alanine, aspartate and glutamate metabolism K00840 O Guanidino-♣ acetate-P K01470 K01484 K00931... 2.7.3.1 Creatine Creatine-P N2-Succinyl-cope Guanidino **→**Creatinine <u>spontaneous</u> — K00294... acetate L-arginine Creatine pathway °♥L-Glutamyl-P Peptide 4-Oxoproline K01485 K03365 D-Nopaline D-Octopine Urea C00012 0 K00613 COOR N-Carbamoyl-Arginine biosynthesis sarcosine K01259... 1.1.1.104 K00147... K01473... Sarcosine 💇 K00318 1.5.1.11 1-Pyrroline-3-hydroxy-N-Methyl-K13821 hydantoin 5-cárboxýlate L-erythro-↓ 4 Hydroxy-Arginine Omithine K01476 K00286 K00294... 1-Pyrroline-5-carboxylate L-Glutamate 4-Hydroxy-5-semialdehyde proline K13240.. K00491 K01750 N-Carbamoyl-K00294.. K00934 K01583.. K01581 1.5.1.1 putrescine K01777 K12658 4-Hydroxyglutamate Nω-Hydroxy K12251 2-Oxo-5-aminovalerate ○ semialdehyde arginine K00273 ေတြ cis-4-Hydroxy-K01480 K18384 CON17\_ K13240.. K00491 2.6.1.23 Agmatine D-proline K17851 D-Proline Linatine trans-3-Hydroxy-1-Pyrroline-C05945 p-Coumaroyl-CoA proline 2-cárboxylate 2-Oxo-4-hydroxy-5-aminovalerate COOS L-Arginine-P cook (R)-4-Hydroxy-2-oxoglutarate Nitric oxide 1.4.1.12 K10793... K14329 C16326 K14329 **--**K12252 p-Coumaroylp-Coumaroyl-5-Amino-**►⊙**2Pymole-2-carboxylate K18123 ptrescine Lysine degradation agmatine pentanoate 1-Pyrroline-4-hydroxy-2-carboxylate **₩**©°2Pyruvate Feruloyl-Co& 2-Oxoarginine<sup>c</sup> $\mathfrak{P}$ Tropane, piperidine and pyridine alkaloid biosynthesis K14329 K14329 Cysteine and methionine 3.5.4.22 Feruloyl-Feruloyl-Glyoxylate<sup>c</sup> $\heartsuit$ métabolism agmatine ptrescine Putrescine K12253 1.13.12.1 Citrate cycle 🗘 2,5-Dioxopentanoate L-Aspartate-4-semialdehyde K00657 3.5.1.62 -Adenosyl-Glycine Ascorbate and aldarate Glycine, serine and -methionine ्**र्**4-Guanidinometabolism threonine metabolism 4-Guanidino-co y-L-Glutamylmetabolism N-Acetylbutanamide butanal Putrescine putrescine K03343 2.6.1.29 1,3-Diamino-Pentose and glucuronate K09471 K13746 K13746 K17839.. interconversions propane Glyoxylate and dicarboxylate metabolism K11182 ∞∰N4-Acetyl-Carboxy-.Carboxv--**్ర**ూS-Adenosylspermidine norspermidine 🗘 ്ത്യ്-aminometioninamine aminobutanal butyraldehyde K12256 K13747 K09472 K12254 K00797 . N4-Aceyly-Glutamyl-Norspermidine 💇 coamino-butanoate ூர்-amino-| butyrate 4-Amino-Spermine K13366 K00797 🛡 butanal β-Alanine metabolism K00316 K00802 Spermidine K09473 3.5.1.63 Polyamine Pathway K12259... K00137 Glutathione K17839... metabolism 4-Amino-ADH pathway ADC pathway butanoate K08660 K12255 🇝 L-Homocamosine K05604 4-Guanidino-Alanine, aspartate and glutamate metabolism butanoate K00613

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