Supplementary Material

Identification of transport systems involved in eflornithine delivery across the blood-brain barrier.

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\*Corresponding author: [sarah.thomas@kcl.ac.uk](mailto:sarah.thomas@kcl.ac.uk)**Table S1:** Substrates/inhibitors used to identify CAA systems (White, 1985; Deves and Boyd, 1998; Closs, 2002; O’Kane et al., 2006; Watson et al., 2016). System y+ transporters are known as the cationic amino acid transporter (CAT) family and the transport systems, y+L, bo,+, and Bo,+, are collectively known as the broad-scope amino acid transporter (BAT). The b+ system belongs to another family and has only been expressed in blastocysts (van Winkle and Campione, 1990). A complex of different proteins rather than a single carrier may mediate a distinct system activity and are also tabulated with their respective gene codes.

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| *System* | *Transporter Protein* *Gene code* | *Na+ dependent* | *Substrates* | *Inhibitors* |
| y+ | CAT1-3  SLC7A1-A3 | No  Yes | Lysine, Arginine, Ornithine, ADMA  Small NAA (weak) | *L*-Homoarginine |
| b+ | Not identified at molecular level | No | Arginine, Lysine.  NAA do NOT inhibit CAA transport even if Na+ present. | *L*-Homoarginine |
| b0,+ | rBAT/ b 0,+AT (SLC3A1/ SLC7A9) heteromeric complex | No  No | Lysine, Arginine,  Cystine, Leucine and other NAA | Harmaline |
| y+L | 4F2hc (SLC3A2) and y+LAT-1 (SLC7A7) or y+LAT-2 (SLC7A6) | No  Yes | Lysine, Arginine, Ornithine  Leucine, Methionine, Glutamine Other NAA | N-ethymaleimide  (NEM) |
| B0,+ | ATB0,+  SLC6A14 | Yes  Yes | Lysine, Arginine(1), Alanine  Small and branched NAA | BCH |

1. Interestingly, the physiological relevance of the B0,+ system transporter protein, ATB0,+, in the transport of the cationic amino acid, arginine, is debated (Ahmadi et al., 2018; Fairweather et al., 2021).

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