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(71) Applicant: **GENERATION BIO CO.** [US/US]; 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US).

(72) Inventors: **LIU, Leah, Yu**; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US). **MONDS, Russell**; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US). **CHIOCCO, Matthew, James**; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US). **SILVER,**

Nathaniel; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US). **SAMAYOA, Phillip**; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US). **KERR, Douglas, Anthony**; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US). **KEENAN, Jessica, Lynn**; c/o Generation Bio Co., 301 Binney Street, 4th Floor, Cambridge, MA 02142 (US).

(74) Agent: **CLARKE, Marcie, B.** et al.; McCarter & English, LLP, 265 Franklin Street, Boston, MA 02110 (US).

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(54) Title: CLOSED-ENDED DNA VECTORS AND USES THEREOF FOR EXPRESSING PHENYLALANINE HYDROXYLASE (PAH)

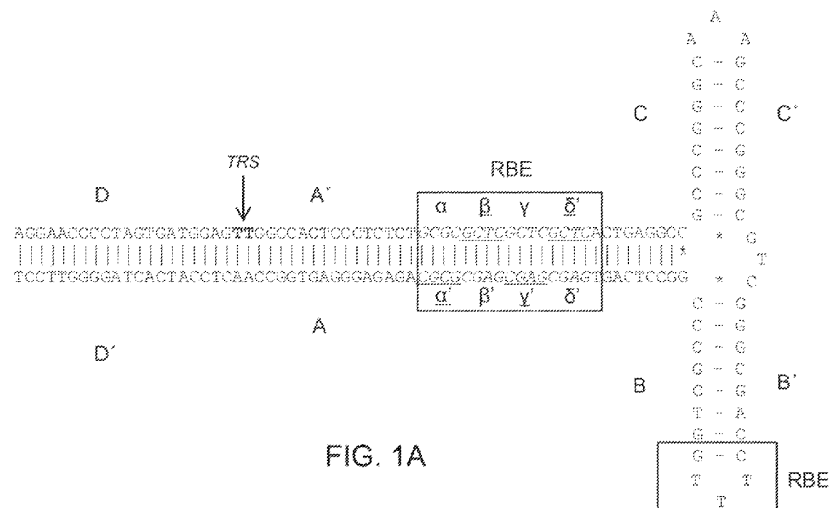


FIG. 1A

(57) Abstract: Described herein are ceDNA vectors having linear and continuous structure for delivery and expression of a transgene. ceDNA vectors comprise an expression cassette flanked by two ITR sequences, where the expression cassette comprises a codon optimized nucleic acid sequence encoding a PAH protein, in combination with particular promoter sequences and cis-regulatory elements. Further provided herein are methods and cell lines for reliable gene expression of PAH protein *in vitro*, *ex vivo* and *in vivo* using the ceDNA vectors. Also provided herein are methods and compositions comprising ceDNA vectors useful for the expression of PAH protein in a cell, tissue or subject, and methods of treatment of diseases with said ceDNA vectors expressing PAH protein. Such PAH protein can be expressed for treating disease, *e.g.*, Phenylketonuria (PKU).

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