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(71) Applicant: **GENOVIE AB** [SE/SE]; Östra Vittusgatan 36, 371 33 Karlskrona (SE).

(72) Inventors: **JARVIS, Reagan Micheal**; c/o Genovie AB, Östra Vittusgatan 36, 371 33 Karlskrona (SE). **PASE, Luke Benjamin**; c/o Genovie AB, Östra Vittusgatan 36, 371 33 Karlskrona (SE). **HILL, Ryan Edward**; c/o Genovie AB, Östra Vittusgatan 36, 371 33 Karlskrona (SE).

(74) Agent: **CHAS. HUDE A/S**; H.C. Andersens Boulevard 33, 1780 København V (DK).

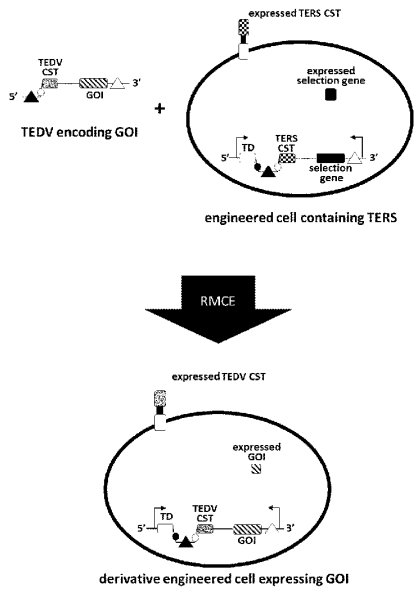
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(54) Title: A CELL SURFACE TAG EXCHANGE (CSTE) SYSTEM FOR TRACING AND MANIPULATION OF CELLS DURING RECOMBINASE MEDIATED CASSETTE EXCHANGE INTEGRATION OF NUCLEIC ACID SEQUENCES TO ENGINEERED RECEIVER CELLS

Figure 1



(57) Abstract: A combined system comprising two separate components, wherein the first component is a tag-exchange donor vector (TEDV) encoding a first cell surface tag (CST) exon flanked by a 3' intron fragment, and a gene of interest (GOI) in the antisense orientation, and the second component is an engineered cell containing within its genome a tag-exchange receiver site (TERS), encoding a second CST exon adjoined by a full intron sequence to an exon encoding a transmembrane domain, and also encoding a reporter gene in the antisense orientation, wherein paired recombinase mediated cassette exchange (RMCE) elements are included in the TEDV and TERS such that execution of RMCE between the TEDV and TERS results in exchange of the reporter element for the GOI encoded by the TEDV, and exchange of the first CST exon for the second CST exon, such that the derivative engineered cell now expresses the first CST and GOI, in place of the second CST and the reporter gene.

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