

Title (en)
FLOW ELECTROPORATION CHAMBER AND METHOD

Title (de)
FLUSSELEKTROPORATIONSKAMMER UND VERFAHREN

Title (fr)
CHAMBRE D'ELECTROPORATION EN FLUX ET PROCEDE ASSOCIE

Publication
EP 0814855 A1 19980107 (EN)

Application
EP 96909619 A 19960311

Priority
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Abstract (en)
[origin: CA2214800A1] The present invention relates to a method and apparatus for the encapsulation of biologically-active substances in red blood cells, characterized by an optionally automated, continuous-flow, self-contained electroporation system (5) which allows withdrawal of blood from a patient, separation of red blood cells, and optional recombination of blood plasma and the modified red blood cells thereby producing blood with modified biological characteristics. The present invention is particularly suited for use to encapsulate allosteric effectors of hemoglobin, thereby reducing the affinity of erythrocytes for oxygen and improving the release of oxygen from erythrocytes in tissues. The blood is introduced into the system (5) at inlet (11) and mixed with an anticoagulant (27). The blood and anticoagulant mixture is passed through a filter (18) and to a blood separation and wash bowl (44). Plasma and white blood cells are admitted into the plasma reservoir (89) while the red blood cells are retained in the wash bowl (44). The separated red blood cells are pumped out and admixed at junction (67) with an IHP solution from reservoir (50). This mixture is cooled by cooling coil (68) and then pumped to electroporation chamber (72) for treatment.
[origin: CA2214800A1] The present invention relates to a method and apparatus for the encapsulation of biologically-active substances in red blood cells, characterized by an optionally automated, continuous-flow, self-contained electroporation system (5) which allows withdrawal of blood from a patient, separation of red blood cells, and optional recombination of blood plasma and the modified red blood cells thereby producing blood with modified biological characteristics. The present invention is particularly suited for use to encapsulate allosteric effectors of hemoglobin, thereby reducing the affinity of erythrocytes for oxygen and improving the release of oxygen from erythrocytes in tissues. The blood is introduced into the system (5) at inlet (11) and mixed with an anticoagulant (27). The blood and anticoagulant mixture is passed through a filter (18) and to a blood separation and wash bowl (44). Plasma and white blood cells are admitted into the plasma reservoir (89) while the red blood cells are retained in the wash bowl (44). The separated red blood cells are pumped out and admixed at junction (67) with an IHP solution from reservoir (50). This mixture is cooled by cooling coil (68) and then pumped to electroporation chamber (72) for treatment.

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