

[54] **PREPARATION OF COUPLED HEMOGLOBIN MOLECULES**

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[57] **ABSTRACT**

Hemoglobin molecules are coupled so as to increase their intravascular residence times without significantly diminishing their oxygen transport ability. This is achieved by coupling hemoglobin molecules to one another and/or to serum proteins and gelatin derivatives using dialdehydes such as aliphatic dialdehydes of 3 to 8 carbon atoms, optionally followed by addition of pyridoxal phosphate. The desired material isolated by ammonium sulfate precipitation, the sulfate being added before, simultaneously with, or after the dialdehyde. Solution of the precipitate followed by dialysis and/or ion exchange can also be undertaken.

**12 Claims, 18 Drawing Figures**