

Differential prooxidative effect of adult and fetal hemoglobin

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Human fetal hemoglobin assayed in a peroxidizing system shows an increased prooxidative effect when compared to human adult hemoglobin. This effect is related only to the oxyhemoglobin form since both fetal and adult methemoglobins did not show any prooxidative effect. The prooxidative effect of the oxyhemoglobin form is ascribed to its increased sensitivity to form Superoxide free radicals when transformed to the methemoglobin form. It is proposed that the structure of the heme pocket of fetal oxyhemoglobin enhances free radical release when compared to adult oxyhemoglobin. This difference may be important in some hematological disorders presented by the newborn. © 1986.