Manipulation of Developmental $\gamma$-Globin Expression: an Approach for Healing Hemoglobinopathies

$\beta$-Hemoglobinopathies are highly prevalent inherited blood disorders caused by quantitative or structural defects in $\beta$-globin chains of adult hemoglobin. Inadequate curative options for these disorders have prompted the development of alternative therapies, among which reactivation of developmentally silenced fetal $\gamma$-globin holds great promise. The review by Venkatesan et al. (e00253-20) summarizes the natural mechanisms (hereditary persistence of fetal hemoglobin mutations and single nucleotide polymorphisms) and pharmacological agents for $\gamma$-globin derepression. In addition, the review sheds light on various $\gamma$-globin-inducing gene therapy approaches adopted and the clinical progress achieved in the field.