

oxygen transport function of human blood faithfully and lack the other blood related properties. Emphasis has thus been to develop “hemoglobin”-based oxygen carriers (HBOC), where hemoglobin is derived from humans, animals or produced recombinantly in *E. coli*. The recombinant production of hemoglobin for use as HBOC has caught the fancy of hemoglobin researchers and medical practitioners since they can help avoid disease transmission, blood type mismatch and immune suppression. There has been considerable development in HBOCs and research has helped deal with problems associated with use of HBOCs like hypertension, appropriate oxygen affinities, stability and overexpression in recombinant sources. However, one major problem that prevents wider use of HBOCs is the relative ease with which recombinant hemoglobin dissociates “heme” prosthetic group from its protein matrix within physiological system. The released heme results in serious cytotoxicities which are difficult to suppress. It was thus necessary to improve heme retention ability of hemoglobins for use as HBOCs.

Significantly Enhanced Heme

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