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Recent advances in the development of novel protein scaffolds based therapeutics

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ABSTRACT

Antibodies occupy a central position when it comes to binding proteins with desired antigenic specificities. During the past decade, a plethora of recombinant or humanized versions of antibodies have entered clinical settings with outstanding accomplishments. Yet, they suffer from several drawbacks such as high molecular weight, limited tissue penetration, instability, high production cost, requirement for large doses and potential cytotoxicity. As a result, new generation of receptor proteins has been developed, that are derived from small and robust immunoglobulin (Ig) or non-immunoglobulin based "scaffolds". Combinatorial protein engineering has tremendous scope in the development of these protein scaffolds with immunoglobulin like specificity and/or prescribed binding functions. The advancement made in this regard can boast of developing various validated Ig based and non-Ig protein scaffolds with desirable therapeutic potential. The newly emerging technology has profound scope in translational biology and offer matching replacement for existing immunotherapeutic agents. Only few data from early clinical

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