DNA-Templated Library Synthesis by a Universal Template

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We developed a DNA-templated synthesis method that can construct the entire DNA-encoded library with a single DNA template, regardless of the library size. Taking advantage of deoxyinosine's indiscriminate base-pairing property, we designed a "universal template" that is capable of directing chemical reactions with multiple reactant DNAs with different base sequences. Combining with other design features including photo-cleavable linkers and direct encoding by the reactant DNA, we have demonstrated the capabilities of the universal template in library synthesis, target selection, and hit decoding. Our method can be generally and straightforwardly applied to prepare a variety of chemically diverse DNA-encoded libraries.

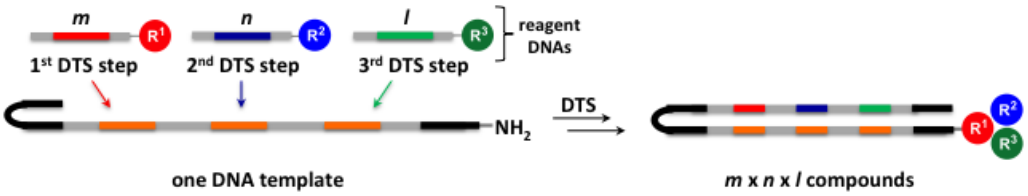

Fig. 1 An entire DNA-encoded library can be prepared with a single universal DNA template.

Keywords： DNA-encoded library; Combinatorial Synthesis; High throughput screening; Drug Discovery.

References

[1] Yizhou Li, Peng Zhao, Mingda Zhang, Xianyuan Zhao, and Xiaoyu Li *J. Am. Chem. Soc.* ***2013***, *135*, 17727−17730.