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## SYNFACTS Highlights in Chemical Synthesis

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Rüdigerstraße 14  
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ISSN 1861-1958

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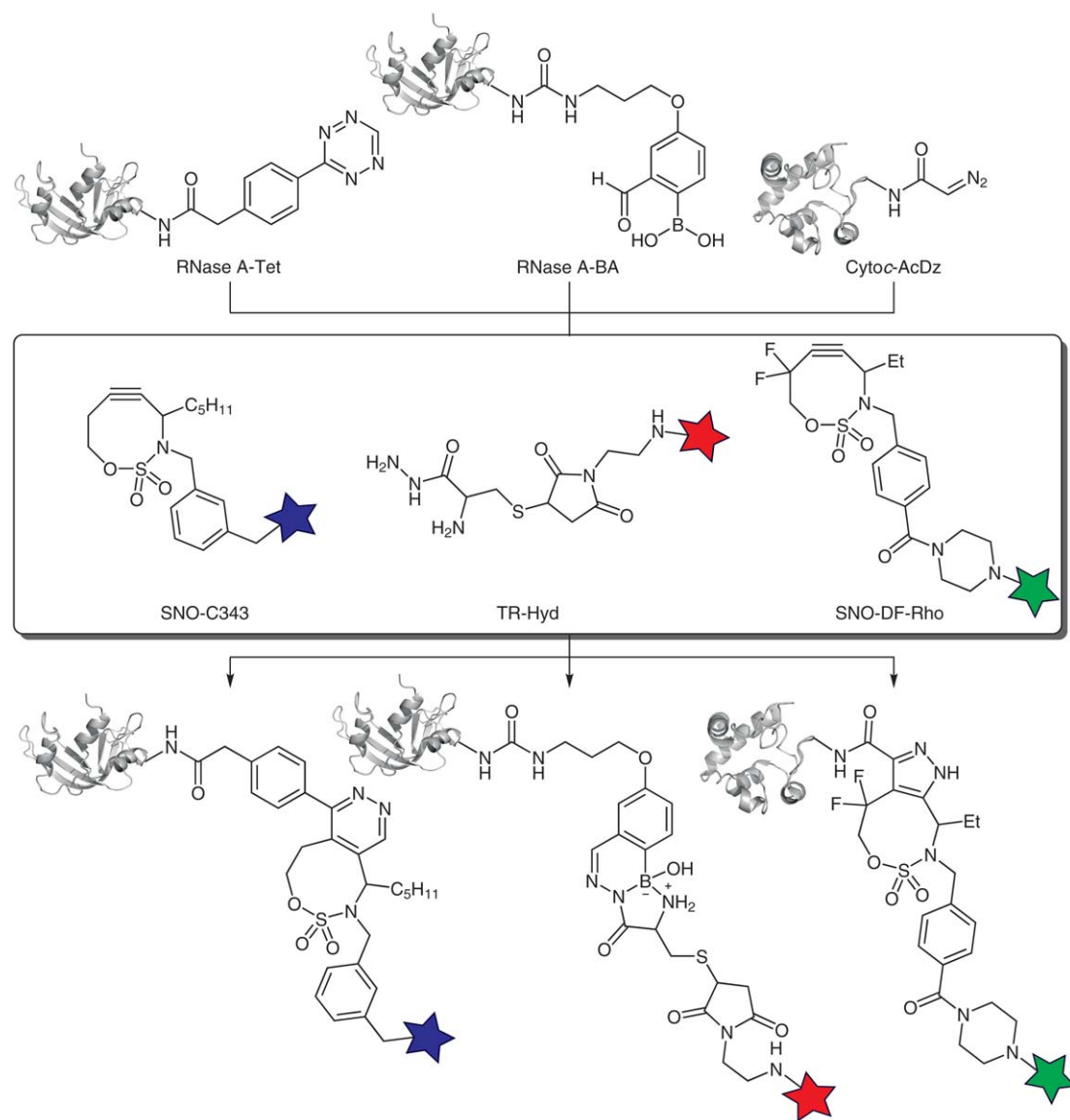
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Triple, Mutually Orthogonal Bioorthogonal Pairs through the Design of Electronically Activated Sulfamate-Containing Cycloalkynes

*J. Am. Chem. Soc.* **2020**, *142*, 18826–18835, DOI: 10.1021/jacs.0c06725.

## Teaching Old Clicks New Tricks



**Significance:** The introduction of bioorthogonal reactions has enabled tremendous advances in chemical biology. The authors designed two new, mutually orthogonal pairs by electronic tuning of S-, N-, and O-containing cycloalkynes (SNO-OCTs). The reported system should prove to be a useful tool for future *in cellulo* investigations.

**Comment:** Using computational and experimental studies, the authors were able to design cycloalkynes with orthogonal reactivities. By including a previously reported boronic acid/hydrazine pair, the authors were able to obtain a triple ligation system and demonstrated its utility through protein and cellular labeling assays.

**SYNFACTS Contributors:** Dirk Trauner, Alexander J. E. Novak  
*Synfacts* 2021, 17(01), 0091 Published online: 16.12.2020  
DOI: 10.1055/s-0040-1719253; Reg-No.: T14520SF

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Chemistry in  
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Key words

bioorthogonal  
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