10 Step Asymmetric Total Synthesis and Stereochemistry of (+)-Dragmacidin D

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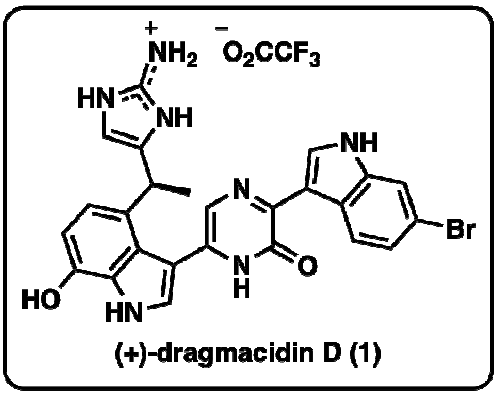
The asymmetric total synthesis of (+)-dragmacidin D (1) has been completed in 10 steps. The lone stereocenter was set using a direct asymmetric alkylation procedure using a C_2-symmetrical tetramine in addition to lithium *N*-(trimethylsilyl)-*tert*-butylamide as the enolizing reagent. A regioselective Larock indole synthesis was employed as well as a copper-mediated acyl cross-coupling reaction to assemble the pyrazinone and aminoimidazole units. The stereochemical evidence from this work strongly supports the *S* configuration at the 6‴ position consistent with other members of the dragmacidin family of natural products.



(+)-dragmacidin D (1)