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Biao Yu, Ph.D.

Research Interests

Total Synthesis, Synthetic Methodology, and Chemical Biology of biologically significant oligosaccharides, glycoconjugates, and other natural products, especially the glycosaminoglycans of mammal, antibiotics of microbe, glycosides of plants and marine species. And Chemistry of the Traditional Chinese Medicine.

Professional Experience

1999.12–present: Professor;
1997.9–2000.11: Associate Professor;
1996.9–1997.8: Assistant Professor, *Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences*

1995.9–1996.8: Postdoc, Dept. of Chemistry, New York University

Other Current Appointment

- ✧ Representative of China, International Carbohydrate Organization, ICO
- ✧ Editorial Board Member, C*arbohydrate Research* (Elsevier)
- ✧ Vice director, State Key Laboratory of Bio-organic and Natural Products Chemistry
- ✧ Director Assistant, Shanghai Institute of Organic Chemistry, CAS
- ✧ Joint Professor, Chinese University of Science and Technology, Hefei

Education

1992-1995: Ph.D. in Organic Chemistry;
1989-1992: M.S. in Organic Chemistry, **Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences**
1985-1989: B.S. in Nuclear Chemistry, **Peking University**

Honors and Awards

1997: 'A*ward for Invention*' (2nd class), Chinese Academy of Sciences
1998: 'Y*oung Chemist Award*', Chinese Chemical Society
1998-1999: '*Outstanding Young Researcher*', Shanghai
1999: '*Meiji Life Science Award*', Meiji Co., Shanghai
1999,2002: '*Rising Star (Grant)*', The Science and Technology Committee of Shanghai
2000: '*Outstanding Young (Grant)*', The National Natural Science Foundation of China
2000: '*Servier Young Investigator Awards in Medicinal Chemistry*', Chinese Pharmacological Society
2000: '*Outstanding Young*', Chinese Academy of Sciences
2003: '*Hundreds Talents (Grant)*', Chinese Academy of Sciences
2004: '*Outstanding Scholar*', Shanghai
2004: '*Candidates of the National Talents*', China
2006: '*Award for Natural Sciences*' (2nd class), Shanghai
2007: '*Research Award for Life Chemistry*', WuXi Pharma Tech

Selected Publications

1. Total synthesis of Lobatoside E, a potent antitumor cyclic triterpene saponin. C. Zhu, P. Tang, **B. Yu**,* *J. Am. Chem. Soc.* **2008**, *130*, 5872-5873.
2. Gold(I) catalyzed glycosidation of 1,2-anhydrosugars. Y. Li, P. Tang, Y.

Chen, **B. Yu**,* *J. Org. Chem.* **2008**, *73*, 4323-4325.

3. Synthesis of Betavulgaroside III, a representative triterpene *seco*-glycoside. S. Zhu, Y. Li, **B. Yu**,* *J. Org. Chem.* **2008**, *73*, 4978-4985.
4. An efficient glycosylation protocol with glycosyl *ortho*-alkynylbenzoates as donors under the catalysis of $Ph_3PAuOTf$. Y. Li, Y. Yang, **B. Yu**,* *Tetrahedron Lett.* **2008**, *49*, 3604-3608.
5. Synthesis of a tetrasaccharide substrate of heparanase. J. Chen, Y. Zhou, C. Chen, W. Xu, **B. Yu**,* *Carbohydr. Res.* **2008**, *343*, 2853-2862.
6. Total synthesis of Candicanoside A, a potent antitumor saponin bearing a rearranged steroid side chain. P. Tang, **B. Yu**,* *Angew. Chem. Int. Ed.* **2007**, *46*, 2527-2530.
7. The cytotoxicity of saponins correlates with their cellular internalization. Y. Wang, Y. Zhang, **B. Yu**,* *ChemMedChem* **2007**, *2*, 888-291.
8. Carbohydrate chemistry in the total synthesis of saponins. **B. Yu**,* Y. Zhang, P. Tang, *Eur. J. Org. Chem.* **2007**, 5145-5161.
9. Facile conversion of spirostan saponin into furostan saponin: synthesis of methyl protodioscin and its 26-thio-analogue. M. Li, **B. Yu**,* *Org. Lett.* **2006**, *8, 2679-2682.*
10. Total synthesis of CRM646-A and B, two fungal glucuronides with potent heparinase inhibition activities. P. Wang, Z. Zhang, **B. Yu**,* *J. Org. Chem.* **2005**, *70*, 8884-9.
11. Synthesis of Anemoclemoside B, the first natural product with an open-chain cyclic acetal glycosidic linkage. J. Sun, X. Han, **B. Yu**,* *Org. Lett.* **2005**, *7*, 1935-1938.
12. 23-Oxa-analogues of OSW-1: efficient synthesis and extremely potent antitumor activity. B. Shi, H. Wu, **B. Yu**,* J. Wu, *Angew. Chem. Int. Ed.* **2004**, *43*, 4324-4327.
13. Efficient sialylation with phenyltrifluoroacetimidate as leaving groups. S. Cai, **B. Yu**,* *Org. Lett.* **2003**, *5*, 3827-3830.
14. Facial synthesis of flavonoid 7-*O*-glycosides. M. Li, X. Han, **B. Yu**,* *J. Org. Chem.* **2003**, *68*, 6842-6845.
15. Total synthesis of the antiallergic naphtho-alpha-pyrone tetraglucoside, cassiaside C2, isolated from cassia seeds. Z. Zhang, **B. Yu**,* *J. Org. Chem.* **2003**, *68*, 6309-6313.
16. Glycosyl trifluoroacetimidates. 2. Synthesis of dioscin and xiebai saponin I. **B. Yu**,* H. Tao, *J. Org. Chem.* **2002**, *67*, 9099-9102.
17. Efficient synthesis of the hexasaccharide fragment of Landomycin A: Using phenyl 2,3-O-thionocarbonyl-1-thio-glycosides as 2-deoxy-beta-glycoside precursors. **B. Yu**,* P. Wang, *Org. Lett.* **2002**, *4*, 1919-1922.
18. A double random strategy for the synthesis of saponin libraries. **B. Yu**,* B. Li, G. Xing, Y. Hui,* *J. Comb. Chem.* **2001**, *3*, 404-406.
19. Stereoselective synthesis of 2-*S*-phenyl-2-deoxy-β-glycosides using phenyl 2,3-*O*-thionocarbonyl-1-thio-glycoside donors via 1,2-migration and concurrent glycosidation. **B. Yu**,* Z. Yang, *Org. Lett.* **2001**, *3*, 377-379.
20. Glycosyl trifluoroacetimidates. Part I. Preparation and application as new glycosyl donors. **B. Yu**,* H. Tao, *Tetrahedron Lett.* **2001**, *42*, 2405-2407.
21. First synthesis of a bidesmosidic triterpene saponin by a highly efficient procedure. **B. Yu**,* J. Xie, S. Deng, Y. Hui,* *J. Am. Chem. Soc.* **1999**, *121*, 12196-12197.
22. First total synthesis of an exceptionally potent saponin, OSW-1. S. Deng, **B. Yu**,* Y. Lou, Y. Hui,* *J. Org. Chem.* **1999**, *64*, 202-208.
23. First total synthesis of tricolorin A. S. Lu, Q. Ouyang, Z. Guo, **B. Yu**,* Y. Hui,* *Angew. Chem.; Int. Engl. Ed.* **1997**, *36*, 2344-2346.