

# Organotin Compounds

Stille Coupling is a versatile C-C bond forming reaction between stannanes and halides or pseudohalides, with very few limitations on the R-groups. Many of the compounds listed below have been extensively cited in the scientific literature; following are just a few examples of their use.

The Japanese research group lead by Yamanaka, have utilized cis-1-ethoxy-2-(tri-n-butylstannyl)-ethylene (H51258) in the palladium-catalyzed cross-coupling reaction of aryl bromides and its utilization for a series of construction of condensed heteroaromatics.<sup>1,2</sup> Hibino and co-workers have used the same material in the total synthesis of Carazostatin and Hyellazole<sup>3</sup>, Carbazquinocins B-F.<sup>4</sup>

Stille-type cross-coupling procedures are utilized in order to prepare a variety of functionalized 2,2'-bipyridines and 2,2':6',2''-terpyridines using such compounds as 4-methyl-2-(tri-n-butylstannyl)pyridine (H51472) or 5-methyl-2-(tri-n-butylstannyl)pyridine (H51377), 6-methyl-2-(tri-n-butylstannyl)pyridine (H51567).<sup>5,6</sup>

Alterman and co-workers prepared analogues of Angiotensin II, an important bio-active peptide of the renin-angiotensin system, using 2-(tri-n-butylstannyl)thiazole (H51090), to study the effects the structure-activity of this class of compounds.<sup>7</sup> Whereas, the thiazole 4-(tri-n-butylstannyl)thiazole (H51457) has been employed in the total synthesis of Epothilone E and other analogues, compounds which have attracted widespread interest in both biological and chemical arenas, due to their potent cytotoxicity.<sup>8</sup>

<sup>1</sup>T. Sakamoto, Y. Kondo, A. Yasuhara and H. Yamanaka, *Heterocycles*, 1990, **31**, 219.

<sup>2</sup>T. Sakamoto, Y. Kondo, A. Yasuhara and H. Yamanaka, *Tetrahedron*, 1991, **47**, 1877.

<sup>3</sup>T. Choshi, T. Sada, H. Fujimoto, C. Nagayama, E. Sugino and S. Hibino, *Tet. Lett.*, 1996, **37**, 2593.

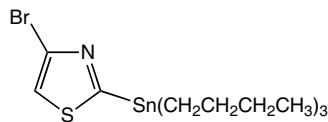
<sup>4</sup>T. Choshi, T. Sada, H. Fujimoto, C. Nagayama, E. Sugino and S. Hibino, *J. Org. Chem.*, 1997, **62**, 2535.

<sup>5</sup>M. Heller, and U. S. Schubert, Ulrich S., *J. Org. Chem.*, 2002, **67**, 8269.

<sup>6</sup>U. S. Schubert, C. Eschbaumer and M. Heller, *Org. Lett.*, 2000, **2**, 3373.

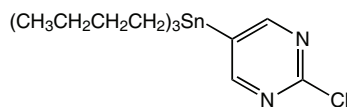
<sup>7</sup>A. K. Mahalingam, et al., *Bioorg. & Med. Chem.*, 2010, **18**, 4570.

<sup>8</sup>K. C. Nicolaou, et al., *Bioorg. & Med. Chem.*, 1999, **7**, 665.



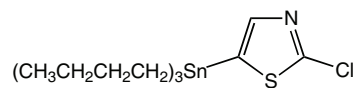
## H51501

4-Bromo-2-(tri-n-butylstannyl)thiazole,  
97%  
[173978-98-8]



## H51512

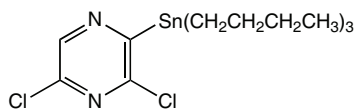
2-Chloro-5-(tri-n-butylstannyl)pyrimidine,  
95%  
[155191-68-7]



## H51537

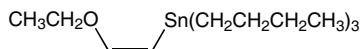
2-Chloro-5-(tri-n-butylstannyl)thiazole,  
95%  
[889672-73-5]

# Organotin Compounds



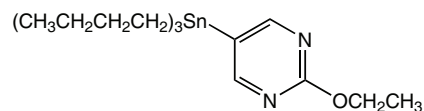
## H51295

2,6-Dichloro-3-(tri-n-butylstannyl)-  
pyrazine, 96%  
[446285-70-7]



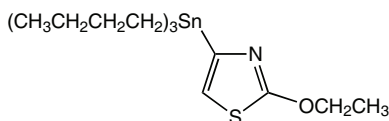
## H51258

cis-1-Ethoxy-2-(tri-n-butylstannyl)-  
ethylene, 94%  
[64724-29-4]



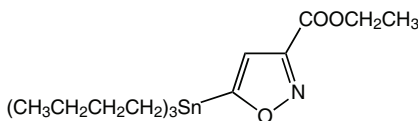
## H51500

2-Ethoxy-5-(tri-n-butylstannyl)pyrimidine  
[1025746-10-4]



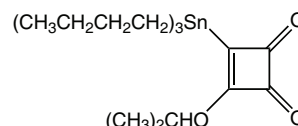
## H51505

2-Ethoxy-4-(tri-n-butylstannyl)thiazole,  
96%  
[240816-28-8]



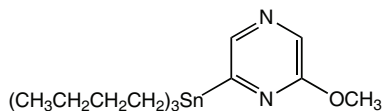
## H51434

Ethyl 5-(tri-n-butylstannyl)isoxazole-  
3-carboxylate, 96%  
[126085-91-4]



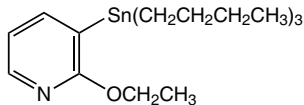
## H51488

3-Isopropoxy-4-(tri-n-butylstannyl)-3-cy-  
clobutene-1,2-dione, 97%  
[129034-70-4]



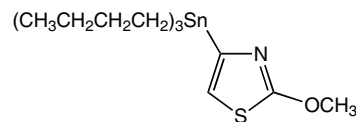
## H51528

2-Methoxy-6-(tri-n-butylstannyl)pyrazine,  
95%  
[1105511-66-7]



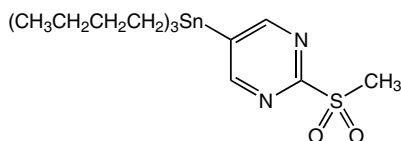
## H51462

2-Methoxy-3-(tri-n-butylstannyl)pyridine,  
95%  
[223418-74-4]



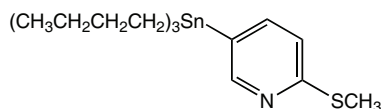
## H51493

2-Methoxy-4-(tri-n-butylstannyl)thiazole,  
96%  
[927391-09-1]



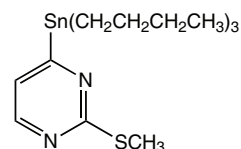
## H51574

2-Methylsulfonyl-5-(tri-n-butylstannyl)  
pyrimidine, 96%  
[122476-85-1]



## H51508

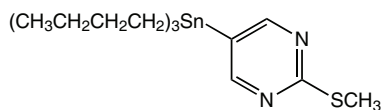
2-Methylthio-5-(tri-n-butylstannyl)-  
pyridine, 95%  
[611168-64-0]



## H51465

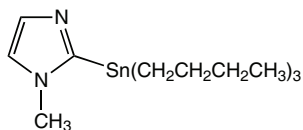
2-Methylthio-4-(tri-n-butylstannyl)  
pyrimidine, 96%  
[123061-49-4]

# Organotin Compounds



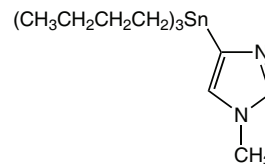
## H51477

2-Methylthio-5-(tri-n-butylstannyl)  
pyrimidine, 96%  
[120717-37-5]



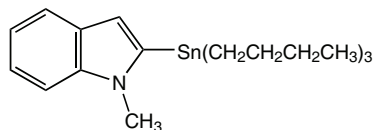
## H51523

1-Methyl-2-(tri-n-butylstannyl)imidazole,  
90+%  
[105494-69-7]



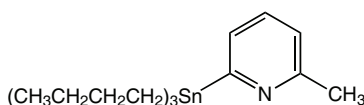
## H51405

1-Methyl-5-(tri-n-butylstannyl)imidazole,  
90+%  
[147716-03-8]



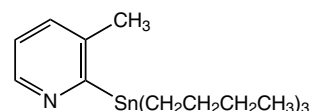
## H51515

1-Methyl-2-(tri-n-butylstannyl)indole,  
96%  
[157427-46-8]



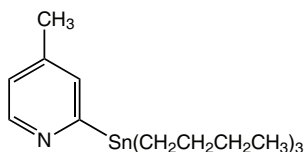
## H51567

2-Methyl-6-(tri-n-butylstannyl)pyridine,  
96%  
[259807-95-9]



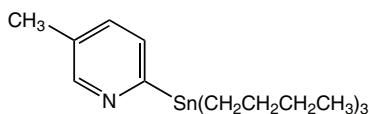
## H51540

3-Methyl-2-(tri-n-butylstannyl)pyridine,  
96%  
[259807-97-1]



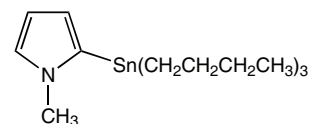
## H51472

4-Methyl-2-(tri-n-butylstannyl)pyridine,  
96%  
[301652-23-3]



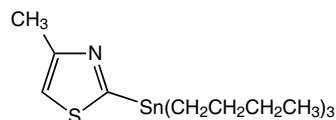
## H51377

5-Methyl-2-(tri-n-butylstannyl)pyridine,  
96%  
[189195-41-3]



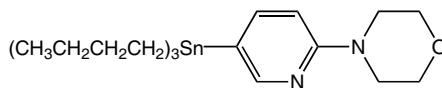
## H51438

1-Methyl-2-(tri-n-butylstannyl)pyrrole  
[118486-97-8]



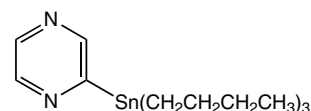
## H51531

5-Methyl-2-(tri-n-butylstannyl)thiazole,  
90+%  
[848613-91-2]



## H51545

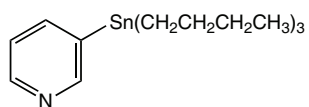
2-(4-Morpholinyl)-5-(tri-n-butylstannyl)  
pyridine  
[223556-07-8]



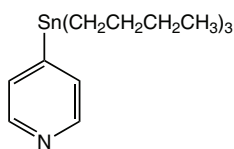
## H51370

2-(Tri-n-butylstannyl)pyrazine, 95%  
[205371-27-3]

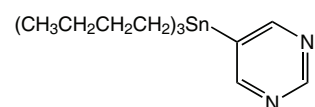
# Organotin Compounds



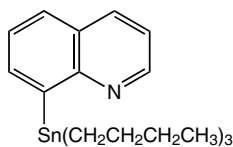
**H51268**  
3-(Tri-n-butylstannyl)pyridine, 97%  
[59020-10-9]



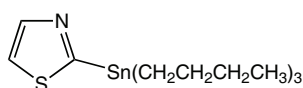
**H51435**  
4-(Tri-n-butylstannyl)pyridine, 96%  
[124252-41-1]



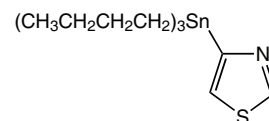
**H51458**  
5-(Tri-n-butylstannyl)pyrimidine, 96%  
[144173-85-3]



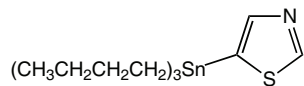
**H51471**  
8-(Tri-n-butylstannyl)quinoline  
[478282-21-2]



**H51090**  
2-(Tri-n-butylstannyl)thiazole, 96%  
[121359-48-6]



**H51457**  
4-(Tri-n-butylstannyl)thiazole, 95%  
[173979-01-6]



**H51455**  
5-(Tri-n-butylstannyl)thiazole, 96%  
[157025-33-7]