

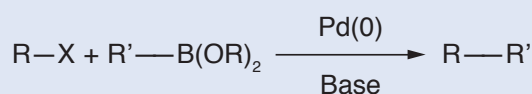
Heterocyclic Organoboron Building Blocks

Introduction

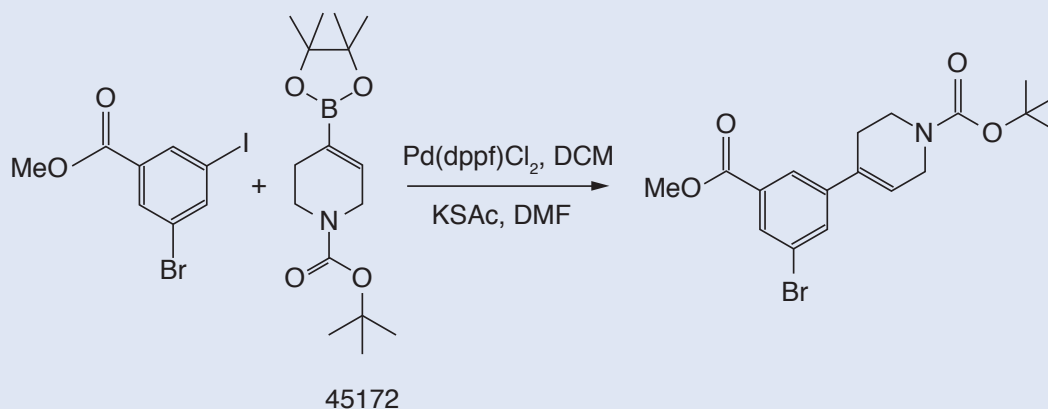
Heterocyclic building blocks are key tools for the organic chemist as they can add pharmacophoric diversity to your compounds. Such is their importance that, of the top 100 small-molecule prescribed drugs, almost 70% contain heterocyclic moieties.

The Suzuki cross-coupling reaction is an efficient, reliable, and environmentally friendly method for the introduction of novel carbon-carbon bonds into molecules.

It involves the cross coupling of organohalides (and their equivalents) with organoboron reagents. The organoboron reagent typically comes in the form of a boronic acid or ester and requires activation by base or fluoride to enable it to undergo transmetalation.

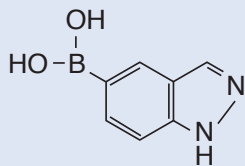


The reaction is highly tolerant of many different functional groups, and boron-containing by-products are easily removed by a simple alkali work-up. Although most commonly used to form aryl-aryl bonds the Suzuki reaction is just as effective for the synthesis of highly substituted styrene products.

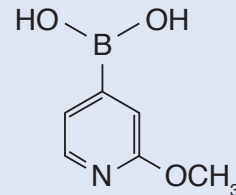


An example of a Suzuki coupling reaction demonstrating the selectivity for iodo over bromo

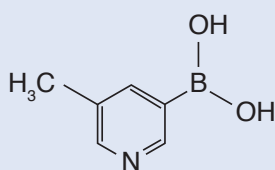
Within our Acros Organics product range we have almost 700 boronic acids and esters, including many interesting heterocyclic ring systems that will increase the pharmacophoric properties of your molecules.



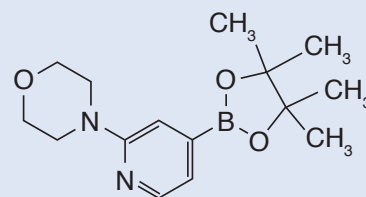
43035



45437



45427



44520

Examples of heterocyclic boronic acids and esters

Heterocyclic Organoboron Building Blocks				
444440010	Acros Organics	1-Acetyl-1H-pyrazole-4-boronic acid pinacol ester, 97%	1GR	1150561-76-4
444440050			5GR	
387510050	Acros Organics	5-Acetyl-2-thiopheneboronic acid, 97%	5GR	206551-43-1
387510250			25GR	
444580010	Acros Organics	2-Aminopyridine-4-boronic acid pinacol ester, 97%	1GR	1195995-72-2
455850010	Acros Organics	7-Azaindole-5-boronic acid pinacol ester, 97%	1GR	754214-56-7
455852500			250MG	
430540010	Acros Organics	1H-Benzimidazole-5-boronic acid pinacol ester, 97%	1GR	1007206-54-3
378730010			1GR	
378730050	Acros Organics	Benzo[b]furan-2-boronic acid, 97%	5GR	98437-24-2
378730250			25GR	
430570010	Acros Organics	Benzo[c][1,2,5]thiadiazole-5-boronic acid pinacol ester, 97%	1GR	1168135-03-2
358910050			5GR	
358910250	Acros Organics	2-Benzothienylboronic acid, 98%	25GR	98437-23-1
430330010	Acros Organics	6-Benzyloxy-1-BOC-indole-2-boronic acid, 97%	1GR	850568-66-0
445320010			1GR	
445320050	Acros Organics	6-Benzyloxy-pyridine-3-boronic acid, 97%	5GR	929250-35-1

Heterocyclic Organoboron Building Blocks

444070010	Acros Organics	5-(N-BOC-aminomethyl)pyridine-3-boronic acid pinacol ester, 97%	1GR	1257554-93-0
451720050	Acros Organics	N-BOC-1,2,3,6-tetrahydropyridine-4-boronic acid pinacol ester, 97%	5GR	286961-14-6
451720250			25GR	
435920010	Acros Organics	2-Bromopyridine-4-boronic acid, 95%	1GR	458532-94-0
435920050			5GR	
444660010	Acros Organics	6-(tert-Butoxycarbonylamino)pyridine-3-boronic acid pinacol ester, 97%	1GR	910462-31-6
444660050			5GR	
430240010	Acros Organics	1-(tert-Butyldimethylsilyl)-1H-indol-6-ylboronic acid, 97%	1GR	913835-60-6
456050050	Acros Organics	tert-Butyl 4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)piperidine-1-carboxylate, 97%	5GR	1048970-17-7
448770010	Acros Organics	3-Chloro-2-methoxypyridine-4-boronic acid, 95%	1GR	957060-88-7
448770050			5GR	
448772500			250MG	
455940010	Acros Organics	2-Chloro-5-methylpyridine-3-boronic acid, 98%	1GR	913835-86-6
455942500			250MG	
430640010	Acros Organics	2-Chloropyridine-3-boronic acid, 97%	1GR	381248-04-0
430640050			5GR	
397770010	Acros Organics	2-Chloro-5-pyridineboronic acid, 97%	1GR	444120-91-6
397770050			5GR	
445360010	Acros Organics	5-Chloropyridine-3-boronic acid, 95%	1GR	872041-85-5
445360050			5GR	
454220010	Acros Organics	2-Chloropyridine-4-boronic acid pinacol ester, 97%	1GR	458532-84-8
454220050			5GR	
430660010	Acros Organics	2-Chloropyridine-3-boronic acid pinacol ester, 97%	1GR	452972-11-1
430660050			5GR	
444700010	Acros Organics	2-Chloropyrimidine-5-boronic acid pinacol ester, 95%	1GR	1003845-08-6
359010010	Acros Organics	5-Chlorothiophene-2-boronic acid, 97+%	1GR	162607-18-3
359010050			5GR	
430400010	Acros Organics	5-Cyano-3-pyridinylboronic acid, 97%	1GR	497147-93-0
391270010	Acros Organics	5-Cyanothiophene-2-boronic acid, 98%	1GR	305832-67-1
391270050			5GR	
444750010	Acros Organics	1-Cyclopentyl-1H-pyrazole-4-boronic acid pinacol ester, 97%	1GR	1233526-60-7
444750050			5GR	
444910010	Acros Organics	5,6-Diaminopyridine-3-boronic acid pinacol ester, 97%	1GR	1204334-21-3
359080010	Acros Organics	Dibenzothiophene-4-boronic acid, 95%	1GR	108847-20-7
359080050			5GR	
429610010	Acros Organics	3,6-Dihydro-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-2H-thiopyran	1GR	862129-81-5
429610050			5GR	
445410010	Acros Organics	2,6-Dimethoxypyridine-3-boronic acid, 97%	1GR	221006-70-8
445410050			5GR	
444920010	Acros Organics	2,6-Dimethoxypyridine-3-boronic acid pinacol ester, 97%	1GR	214360-59-5
444920050			5GR	

Heterocyclic Organoboron Building Blocks

445420010			1GR	
445420050	Acros Organics	2,4-Dimethoxypyrimidine-5-boronic acid, 95%	5GR	89641-18-9
444930010			1GR	
444930050	Acros Organics	2,4-Dimethoxypyrimidine-5-boronic acid pinacol ester, 97%	5GR	936250-17-8
444970010			1GR	
444970050	Acros Organics	6-[3-(Dimethylamino)propoxy]pyridine-3-boronic acid pinacol ester, 97%	5GR	918643-56-8
359252500	Acros Organics	3,5-Dimethylisoxazole-4-boronic acid, 98%	250MG	16114-47-9
399330010			1GR	
399330050	Acros Organics	3,5-Dimethylpyrazole-4-boronic acid pinacol ester, 97%	5GR	857530-80-4
444990010			1GR	
444990050	Acros Organics	1-((1,3-Dioxolan-2-yl)methyl)-1H-pyrazole-4-boronic acid pinacol ester, 97%	5GR	864754-17-6
445010010			1GR	
445010050	Acros Organics	1-[(Ethoxycarbonyl)methyl]-1H-pyrazole-4-boronic acid pinacol ester, 97%	5GR	864754-16-5
454230010			1GR	
454230050	Acros Organics	2-Ethoxy-5-pyridineboronic acid, 97%	5GR	612845-44-0
454360010			1GR	
454360050	Acros Organics	2-Ethoxypyridine-3-boronic acid pinacol ester, 95%	5GR	848243-23-2
454362500			250MG	
448730010			1GR	
448730050	Acros Organics	2-Fluoropyridine-4-boronic acid, 98%	5GR	401815-98-3
397160010			1GR	
397160050	Acros Organics	6-Fluoro-3-pyridinylboronic acid, 97%	5GR	351019-18-6
430380010			1GR	
430380050	Acros Organics	5-Fluoropyridine-3-boronic acid, 97%	5GR	872041-86-6
435930010			1GR	
435930050	Acros Organics	2-Fluoropyridine-4-boronic acid pinacol ester, 95%	5GR	458532-86-0
445460010			1GR	
445460050	Acros Organics	4-Fluoro-3-(tetrazol-5-yl)phenylboronic acid, 95%	5GR	1009303-56-3
427690010			1GR	
427690050	Acros Organics	2-Formyl-3-thiopheneboronic acid, 97%	5GR	4347-31-3
397150010			1GR	
397150050	Acros Organics	5-Formyl-2-thiopheneboronic acid, 97%	5GR	4347-33-5
359390010			1GR	
359390100	Acros Organics	Furan-2-boronic acid, 97%	10GR	13331-23-2
359400025			2.5GR	
359401000	Acros Organics	Furan-3-boronic acid, 97%	100MG	55552-70-0
359405000			500MG	
430500010	Acros Organics	1H-Indazole-4-boronic acid, 97%	1GR	1023595-17-6
430350010	Acros Organics	1H-Indazole-5-boronic acid, 97%	1GR	338454-14-1
455840010			1GR	
455840050	Acros Organics	Indazole-6-boronic acid pinacol ester, 97%	5GR	861905-87-5
431020010			1GR	
431020050	Acros Organics	1H-Indazol-6-ylboronic acid, 97%	5GR	885068-10-0

Heterocyclic Organoboron Building Blocks

454500010			1GR	
454500050	Acros Organics	4-Indolylboronic acid, 95%	5GR	220465-43-0
359460010			1GR	
359461000	Acros Organics	5-Indolylboronic acid, 97%	100MG	144104-59-6
359465000			500MG	
439730010			1GR	
439730050	Acros Organics	1-Isobutyl-1H-pyrazole-4-boronic acid pinacol ester, 97%	5GR	827614-66-4
445080010			1GR	
445080050	Acros Organics	4-(4-Isopropylpiperazin-1-yl)phenylboronic acid pinacol ester, 97%	5GR	1073354-18-3
445090010			1GR	
445090050	Acros Organics	1-Isopropyl-1H-pyrazole-4-boronic acid pinacol ester, 97%	5GR	879487-10-2
430250010			1GR	
430250050	Acros Organics	2-Methoxypyridine-3-boronic acid, 97%	5GR	163105-90-6
454370010			1GR	
454372500	Acros Organics	2-Methoxypyridine-4-boronic acid, 95%	250MG	762262-09-9
378380010			1GR	
378382500	Acros Organics	4-Methoxy-3-pyridineboronic acid hydrate, 97%	250MG	
430260010	Acros Organics	5-Methoxypyridine-3-boronic acid, 97%	1GR	850991-69-4
445160010			1GR	
445160050	Acros Organics	2-Methyl-1H-benzimidazole-5-boronic acid pinacol ester, 97%	5GR	1314216-34-6
441440010			1GR	
441440050	Acros Organics	N-Methylcarbazole-3-boronic acid pinacol ester, 97%	5GR	1217891-71-8
359580010			1GR	
359580050	Acros Organics	3,4-Methylenedioxyphenylboronic acid, 98%	5GR	94839-07-3
454340010			1GR	
454342500	Acros Organics	1-Methyl-1H-indazole-4-boronic acid, 95%	250MG	1001907-60-3
430480010	Acros Organics	1-Methylindazole-6-boronic acid, 97%	1GR	1150114-80-9
430490010	Acros Organics	2-Methyl-2H-indazole-6-boronic acid, 97%	1GR	1001907-57-8
445130010			1GR	
445130050	Acros Organics	1-Methyl-1H-indazole-4-boronic acid pinacol ester, 97%	5GR	885698-94-2
445140010			1GR	
445140050	Acros Organics	2-Methyl-2H-indazole-4-boronic acid pinacol ester, 97%	5GR	885698-95-3
441010010			1GR	
441010050	Acros Organics	N-Methylindole-3-boronic acid pinacol ester, 97%	5GR	683229-61-0
431420010	Acros Organics	2-Methyl-6-methoxypyridine-3-boronic acid, 97%	1GR	459856-12-3
445490010			1GR	
445490050	Acros Organics	1-Methyl-1H-pyrazole-4-boronic acid hydrochloride, 95%	5GR	1026796-02-0
454380010			1GR	
454382500	Acros Organics	2-Methylpyridine-4-boronic acid, 95%	250MG	579476-63-4
430270010	Acros Organics	4-Methylpyridine-3-boronic acid, 90%	1GR	148546-82-1
454270010			1GR	
454272500	Acros Organics	5-Methylpyridine-3-boronic acid, 95%	250MG	173999-18-3

Heterocyclic Organoboron Building Blocks

430390010	Acros Organics	2-Methylpyridine-3-boronic acid hydrochloride, 97%	1GR	1072952-34-1
439950010	Acros Organics	5-Methylpyridine-2-boronic acid N-phenyldiethanolamine ester, 50-70%, see CofA for exact composition	1GR	872054-54-1
439950050			5GR	
448720010	Acros Organics	2-Methylpyridine-4-boronic acid pinacol ester, 95%	1GR	660867-80-1
448722500			250MG	
454390010	Acros Organics	6-Methylpyridine-3-boronic acid pinacol ester, 95%	1GR	610768-32-6
454392500			250MG	
441040010	Acros Organics	N-Methylpyrrole-2-boronic acid pinacol ester, 97%	1GR	850567-47-4
441040050			5GR	
441000010	Acros Organics	N-Methylpyrrole-3-boronic acid pinacol ester, 90%	1GR	953040-54-5
441000050			5GR	
445180010	Acros Organics	5-(Methylsulfonyl)pyridine-3-boronic acid pinacol ester, 95%	1GR	1206641-26-0
445180050			5GR	
382960010	Acros Organics	1-Methyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole, 97+%	1GR	761446-44-0
382960050			5GR	
382960250			25GR	
430560010	Acros Organics	1-Methyl-1,2,3,6-tetrahydropyridine-4-boronic acid pinacol ester, 97%	1GR	454482-11-2
359600050	Acros Organics	4-Methylthiophene-2-boronic acid, 96%	5GR	162607-15-0
359605000			500MG	
445190010	Acros Organics	1-Methyl-3-(trifluoromethyl)-1H-pyrazole-5-boronic acid pinacol ester, 97%	1GR	1025719-23-6
445190050			5GR	
445200010	Acros Organics	2-Morpholinopyridine-4-boronic acid pinacol ester, 97%	1GR	888721-86-6
445200050			5GR	
383292500	Acros Organics	2-(Piperazin-1-yl)pyridine-5-boronic acid pinacol ester, 97%	250MG	871125-86-9
445510010	Acros Organics	Pyrazole-3-boronic acid hydrochloride, 97%	1GR	1314216-33-5
359650010			1GR	
359650050	Acros Organics	Pyridine-3-boronic acid, 95%	5GR	1692-25-7
359652500			250MG	
439890010	Acros Organics	2-Pyridineboronic acid N-phenyldiethanolamine ester, 50-70%, see CofA for exact composition	1GR	662138-96-7
439890050			5GR	
439890100			10GR	
449970010	Acros Organics	1-(Pyridin-3-ylmethyl)-1H-pyrazole-4-boronic acid pinacol ester, 97%	1GR	864754-21-2
449970050			5GR	
451700250	Acros Organics	5-Pyrimidinylboronic acid, 97%, may contain varying amounts of anhydride	25GR	109299-78-7
451701000			100GR	
454350010	Acros Organics	2-(Pyrrolidin-1-yl)pyrimidine-5-boronic acid pinacol ester, 95%	1GR	1015242-07-5
454352500			250MG	
367730010	Acros Organics	Quinoline-3-boronic acid, 97%	1GR	191162-39-7
367730050			5GR	
367730250			25GR	
430200010	Acros Organics	Quinoline-6-boronic acid, 97%	1GR	376581-24-7
430200050			5GR	

Heterocyclic Organoboron Building Blocks

359670010	Acros Organics	Quinoline-8-boronic acid, 96%	1GR	86-58-8
359672500			250MG	
432110010	Acros Organics	3-Quinolineboronic acid pinacol ester, 97%	1GR	171364-85-5
432110050			5GR	
439640010	Acros Organics	6-Quinolineboronic acid pinacol ester, 97%	1GR	406463-06-7
439640050			5GR	
445520010	Acros Organics	Quinoxaline-6-boronic acid pinacol ester, 97%	1GR	1167418-13-4
445520050			5GR	
445530010	Acros Organics	2,2,6,6-Tetramethyl-3,6-dihydro-2H-pyran-4-boronic acid pinacol ester, 97%	1GR	1142363-56-1
452630010	Acros Organics	5-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)benzo[b]furan, 97%	1GR	519054-55-8
452630100			10GR	
430470010	Acros Organics	5-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)benzofurazan, 97%	1GR	1073355-14-2
430470050			5GR	
371780010	Acros Organics	5-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-indole, 97+%	1GR	269410-24-4
371780050			5GR	
371782500			250MG	
382940010	Acros Organics	4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole, 97+%	1GR	269410-08-4
382940050			5GR	
382940250			25GR	
384640010	Acros Organics	4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole-1-carboxylic acid tert-butyl ester, 97%	1GR	552846-17-0
384640050			5GR	
367600010	Acros Organics	3-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine, 97%	1GR	329214-79-1
367600050			5GR	
367600250			25GR	
367510010	Acros Organics	4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)pyridine, 97%	1GR	181219-01-2
367510050			5GR	
451520010	Acros Organics	4,4,5,5-Tetramethyl-2-(2-methyl-3-furyl)-1,3,2-dioxaborolane, 90%	1GR	864776-02-3
451520050			5GR	
431210010	Acros Organics	4,4,5,5-Tetramethyl-2-(1-methylpiperid-4-yl)-1,3,2-dioxaborolane, 97%	1GR	1264198-72-2
431100010	Acros Organics	4,4,5,5-Tetramethyl-2-(tetrahydrofuran-3-yl)-1,3,2-dioxaborolane, 97%	1GR	331958-90-8
431100050			5GR	
445550010	Acros Organics	2-(Tetrazol-5-yl)phenylboronic acid, 95%	1GR	155884-01-8
445550050			5GR	
445560010	Acros Organics	3-(Tetrazol-5-yl)phenylboronic acid, 96%	1GR	775351-30-9
445560050			5GR	
445570010	Acros Organics	4-(Tetrazol-5-yl)phenylboronic acid, 97%	1GR	179942-55-3
445570050			5GR	
445580010	Acros Organics	1-[(2-Thienyl)methyl]-1H-pyrazole-4-boronic acid pinacol ester, 97%	1GR	864754-19-8
344710010	Acros Organics	2-Thiopheneboronic acid, 97%	1GR	6165-68-0
344710050			5GR	
344710250			25GR	
345660010	Acros Organics	3-Thiopheneboronic acid, 97%	1GR	6165-69-1
345660050			5GR	

Heterocyclic Organoboron Building Blocks

441030010			1GR	
441030050	Acros Organics	N-TIPS indole-3-boronic acid pinacol ester, 97%	5GR	476004-82-7
441020010			1GR	
441020050	Acros Organics	N-TIPS pyrrole-3-boronic acid pinacol ester, 95%	5GR	365564-11-0
430520010			1GR	
430522500	Acros Organics	(5-Trifluoromethylpyridin-3-yl)boronic acid, 95%	250MG	947533-51-9

There are many other boronic acids and esters available in a wide range of convenient pack sizes from Acros Organics and Maybridge. To discover the full list click [here](#).

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