

Efficient synthesis of 2-amino-6-arylbenzothiazoles via Pd(0) Suzuki cross coupling reactions : potent urease enzyme inhibition and nitric oxide scavenging activities of the products

Abstract

In general, benzothiazole derivatives have attracted great interest due to their pharmaceutical and biological importance. New 2-amino-6-arylbenzothiazoles were synthesized in moderate to excellent yields via Suzuki cross coupling reactions using various aryl boronic acids and aryl boronic acid pinacol esters and the antiurease and nitric oxide (NO) scavenging activity of the products were also examined. The most active compound concerning urease enzyme inhibition was 6-phenylbenzo[d]thiazole-2-amine 3e, with an IC₅₀ value of 26.35 µg/mL. Compound 3c, 6-(4-methoxyphenyl) benzo[d]thiazole-2-amine, exhibited the highest nitric oxide percentage scavenging at 100µg/mL.

Keyword: Benzothiazoles; Nitric oxide scavenging activity; Suzuki cross coupling; Urease activity.