Cite this as: Rongfang GUO, Gaofeng YUAN, Qiaomei WANG, 2013. Effect of NaCl treatments on glucosinolate metabolism in broccoli sprouts. *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)*, **14**(2):124-131. [doi:10.1631/jzus.B1200096]

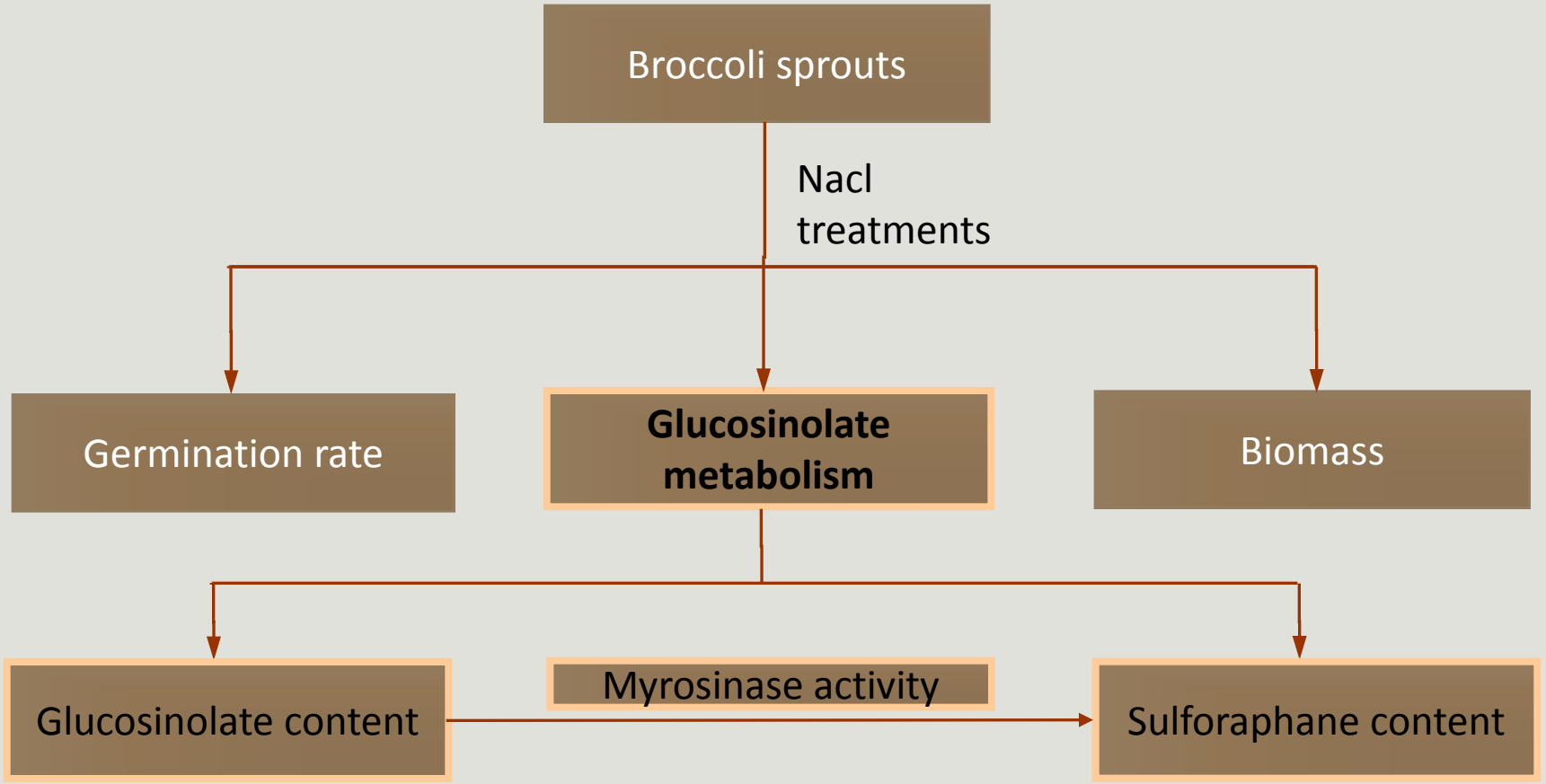
Effect of NaCl treatments on glucosinolate metabolism in broccoli sprouts

氯化钠对青花菜芽菜中芥子油苷代谢的影响

Key words: Glucosinolates, *Brassica oleracea*, Sulforaphane, Myrosinase, NaCl

关键词：芥子油苷；青花菜；萝卜硫素；黑芥子酶；氯化钠

- To understand the regulation mechanism of NaCl on glucosinolate metabolism in broccoli sprouts, the germination rate, fresh weight, contents of glucosinolates and sulforaphane, as well as myrosinase activity of broccoli sprouts germinated under 0, 20, 40, 60, 80, and 100 mmol/L of NaCl were investigated.
- The glucoerucin, glucobrassicin, and 4-hydroxy glucobrassicin in 7-d-old broccoli sprouts were significantly enhanced and the activity of myrosinase was inhibited by 100 mmol/L of NaCl.
- The total glucosinolate content in 7-d-old broccoli sprouts was markedly decreased although the fresh weight was significantly increased after treatment with NaCl at relatively low concentrations (20, 40, and 60 mmol/L).
- NaCl treatment at the concentration of 60 mmol/L for 5 d maintained higher biomass and comparatively higher content of glucosinolates in sprouts of broccoli with decreased myrosinase activity. A relatively high level of NaCl treatment (100 mmol/L) significantly increased the content of sulforaphane in 7-d-old broccoli sprouts compared with the control.


Broccoli sprouts
Nacl
treatments
Germination rate
Glucosinolate
metabolism
Biomass
Glucosinolate content
Myrosinase activity
Sulforaphane content