白藜蘆醇添加對虎杖萃取液之抗氧化性與抑制酪胺酸酵素活性影響

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摘 要

本研究先以70%乙醇(0.7EtOH)萃取傳統中草藥虎杖中有效成分-白藜蘆醇(Resveratrol; Res)，並進行其萃取液之冷凍乾燥物的Res定量分析；再以0.7EtOH及逆滲透水(RO Water)做為稀釋溶劑(其稀釋液分別相對命名為EEPC及WEPC)，分別進行稀釋上述虎杖冷凍乾燥物與市售純度50%與98%之Res，並進行其稀釋液之Res定量分析，以及其抗氧化與抑制酪胺酸酵素活性效果之評估。最後，在EEPC與WEPC稀釋液中各別添加不同純度(50%及98%)的Res，並進行其抑制酪氨酸酵素活性效果之探討。 虎杖冷凍乾燥物之抗氧化(DPPH清除自由基能力)試驗結果顯示，EEPC、50%與98% Res稀釋於0.7EtOH時，其DPPH清除率隨著樣品濃度或Res含量的增加而增加，但樣品濃度超過125 μg/mL時，其清除率趨於定值，EEPC之清除率約達到95%，其略高於50%與98% Res者(其清除率分別相對為93%與90%)；WEPC之清除率未能高於60%，而且呈現不規則狀態，當樣品濃度超過25 μg/mL時，其清除率皆低於50%與98% Res者。 在抑制酪胺酸酵素活性方面，EEPC之酪胺酸酵素活性抑制率隨著樣品濃度的增加而漸增趨於定值，約為87%，當樣品濃度超過100 μg/mL時，其抑制率皆高於50%與98% Res者；然而，50%與98% Res之0.7EtOH稀釋液的抑制率隨著樣品濃度或Res含量的增加而先行增加，當樣品濃度約為10-25 μg/mL或Res含量約為15 μg/mL時，其抑制率似乎可達到最高值，約為88-90%，而後隨著其濃度或含量增加而降低；WEPC之抑制率雖然隨著樣品濃度的增加而增加，但未能高於30%；然而，50%、98%、99%的Res之RO Water稀釋液的抑制率隨著樣品濃度增加而先行漸增於定值後，接著其抑制率隨著樣品濃度增加而有逐漸下降趨勢。不同濃度EEPC樣品中添加不同純度Res之抑制酪胺酸酵素活性能力並未能如預期地隨著Res添加量或其含量而提高其抑制效果，其抑制率亦未能呈現相乘效應，當Res添加濃度或含量越高時，其對酪胺酸酵素活性抑制率反而降低，可能由於0.7EtOH中乙醇對酪胺酸酵素系統產生破壞作用之故。對WEPC而言，單獨添加50%或98%Res時，其抑制率隨著Res含量增加而增加，略呈現相加效應；但同時添加50%及98%Res時，當WEPC濃度超過50 μg/mL時，其抑制率隨著Res含量增加而下降，未能呈現其相加效應，故添加過多的Res未必能提高其抑制率。

關鍵詞 : 虎杖抗氧化性 ; 白藜蘆醇 ; 抗氧化性 ; 酪胺酸酵素

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