

Antioxidant properties of cocoa powder.

ABSTRACT

This study was aimed to determine antioxidant properties of cocoa powder. Crude cocoa extracts were fractionated using preppacked column (25 cm × 2.0 cm) with Sephadex LH 20 and an increase in water-acetone (85:15, 70:30, and 40:60, v/v) as elution. The resulting fractions 1 (F1), 2 (F2) and 3 (F3) were tested for phenolic contents, antioxidant capacity, identification of bioactive compounds liquid chromatography-mass spectrometry (LC-MS) and stability test. Theobromine and caffeine were major compounds detected in F1 and F2. Monomer, dimer and trimer were identified in F3 as m/z 289, 578 and 867, respectively. Addition of F1 and F2 could reduce antioxidant capacity of F3. Catechin and epicatechin in F3 was stable when stored at 4 and -20C for 5 months. High antioxidant capacity in F3 was likely due to the monomeric, dimeric and trimeric phenolic compounds. The presence of methylxanthines could reduce antioxidant capacity of flavonoids in cocoa powder.

Keyword: Cocoa powder; Antioxidants; Polyphenol; Methylxantine