

เข้มข้นของฟลูออไรด์หลังจากที่ปล่อยให้ระบบเข้าสู่สมดุลภายใต้สภาวะที่ได้จากการทดลองลดลง
เหลือ ประมาณ 4.40 พีพีเอ็ม และ 4.10 พีพีเอ็ม ตามลำดับ ซึ่งคิดเป็นเปอร์เซ็นต์การขจัดได้
เท่ากับ 62 และ 66 ตามลำดับ

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Thesis Title	Defluoridation by Bone Char	
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ABSTRACT

Defluoridation by bone char was studied. The removal process is the ion exchange adsorption between fluoride in the solution and carbonate of the apatite comprising bone char. The amount of adsorbed fluoride at equilibrium was determined by using fluoride ion-selective electrode. The experiment started with the study of fluoride adsorption behavior on bone char. It was found that fluoride adsorption was multilayer type. The effect of temperature on the adsorption was also studied and found to be endothermic with maximum amounts of fluoride adsorbed per gram on the first layer of bone char surface at 25°, 35° and 45° C were about 21.1, 22.4, and 25.7 μmol , respectively. It was also found that the optimum time for the adsorption to saturation was 9 hours and optimum pH of fluoride solution was between 7.00 and 7.50. Particle sizes had slight effect on the adsorption of fluoride. As for the influences of ions such as chloride, iodide, potassium and sodium on the adsorption, it revealed such a slightly one, but calcium tended to precipitate out the fluoride. The defluoridation of high fluoride water sample from Amphur Sankampang and Amphur Phang in Chiang Mai, of which the fluoride contents was 10.8 and 13.0 ppm, respectively was attempted by single batch equilibration treatment. The result

revealed the decrease of fluoride concentration to 4.40 ppm and 4.10 ppm after equilibration at conditions of experiment with the percentage of defluoridation were 62 and 66, respectively.

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