

# 学位論文審査結果の要旨

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<p>(学位論文審査結果の要旨)</p> <p>Overestimation of fibrinogen concentration in cryoprecipitate by repeated freeze-thawing with long thawing period as used in the Clauss method</p> <p>【主論文審査結果の要旨】</p> <p>著者らは論文において下記の内容を述べている。</p> <p>Background: Cryoprecipitate (CRY) is widely used for treating acquired hypofibrinogenemia. During our study to determine an optimal preparation method, we noticed that the measurement of fibrinogen concentration in CRY had a risk of overestimation. We analyzed this condition and mechanism.</p> <p>Study design and methods: CRY was prepared from fresh frozen plasma (FFP) under four conditions: A, 30 h thawing time, 2 cycles; B, 24 h thawing time, 2 cycles; C, 30 h thawing time, 1 cycle; and D, 24 h thawing time, 1 cycle. Then, fibrinogen concentrations in CRY and cryosupernatant (CS) were measured by the Clauss method.</p> <p>Results: Purification (CRY/CRY+CS) and recovery (CRY/FFP) rates in CRY prepared under 2-cycle conditions were higher than those under 1 cycle. However, recovery rates often exceeded 100%, particularly in the case of CRY prepared under A condition, and fibrinogen concentrations calculated by direct measurement were higher than those indirectly calculated from FFP and CS, suggesting an overestimation of fibrinogen values. The level of soluble fibrin monomer complex was considerably higher in CRY prepared under A than under D condition, indicating that CRY adopted a hypercoagulated state. We further</p>			

found that repeated thawing/freezing increased fibrinogen values as measured by the Clauss method while mechanical vortexing did not.

Discussion: Our findings suggest that direct assessment of fibrinogen contents in CRY prepared by repeated freeze-thawing with a longer thawing period presents a higher risk of overestimation. For the purpose of quality control, we propose an alternative method to indirectly estimate fibrinogen concentrations in CRY from those of CS and FFP.

クリオプレシピテートの成分についての研究はあまり類を見ない。また、品質管理についても検討されており、フィブリノゲンとは異なるクリオプレシピテートの新たな可能性も示唆した論文であり、学術上極めて有益であり、学位論文として価値あるものと認めた。

#### Transfusion

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