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論文審査の要旨
Summary of Dissertation Review

博士の専攻分野の名称 Degree	博　士　（農学）	氏名 Author	LA HOANG ANH
学位授与の要件	学位規則第４条第①・２項該当		

論　文　題　目　Anti-Blood Cancer Activities of Bioactive Compounds from Rice (*Oryza sativa* var. Koshihikari) and an Invasive Weed (*Andropogon virginicus*)

論文審査担当者　Dissertation Committee Member

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〔論文審査の要旨〕 Summary of Dissertation Review

This research was carried out to examine pharmaceutical properties and the anti-blood cancer activities of bioactive compounds from rice (*Oryza sativa* var. Koshihikari) and an invasive weed (*Andropogon virginicus*).

The dissertation includes 6 Chapters. Chapter 1: General introduction; Chapter 2: Pharmaceutical properties of the invasive weed *Andropogon virginicus*; Chapter 3: Cytotoxic activities of momilactones against leukemia, lymphoma, and multiple myeloma cell lines; Chapter 4: Cytotoxic mechanisms of momilactones against acute promyelocytic leukemia and multiple myeloma cell lines; Chapter 5: Effects of *in vitro* digestion on anti-blood cancer properties of momilactones and Chapter 6: General discussion.

The invasive weed *A. virginicus* is shown to be promising source of antioxidants, anti-α-amylase, and anti-tyrosinase abilities, and cytotoxicity against chronic myeloid leukemia cell lines. Momilactone A (MA) and momilactone B (MB) at 5 μM can inhibit various blood cancer cell lines including chronic myeloid leukemia (CML), acute promyelocytic leukemia (APL), mantle cell lymphoma (MCL), and multiple myeloma (MM) by inducing cell apoptosis. In addition, MB and MAB (mixture of MA and MB) promote APL (HL-60) cell apoptosis by inhibiting the expression of BCL-2 and cleaving procaspase 3 to the active form. Finally, the cytotoxicity of momilactones significantly decreases through the digestive stages including oral, gastric, and intestinal phases which is in line with the reduction of momilactone contents in digested samples.

From the achievements mentioned above, the applicant La Hoang Anh has published 4 papers in international journals as first author. After carefully examining the results from presentation, dissertation, achievements, and the responses on the questions raised from the examiners, the committee agreed that the applicant passes the exam.