death receptors proteins.

Conclusions: This study demonstrated that EGCG inhibits TRAIL-induced apoptosis through autophagic flux activation and decrease of death receptors. On the basis of these results, we suggest that it might be need careful consideration to use autophagy activators including EGCG in combination anti-tumor therapy with TRAIL.

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Inhibition of autophagy by hinokitiol enhances TRAIL-induced tumor cell death through augmentation of apoptotic signaling.

Ji-Hong Moon[1], Sung-Wook Kim[1], Ju-Hee Lee[1], Jae-Won Seol1, Nazim Uddin MD[1], Rasheduzzaman MD[1], Sang-Youel Park[*1]

[1]Biosafety Research Institute, College of Veterinary Medicine, Chonbuk National University, Iksan, Jeonbuk 54596, South Korea

Introduction: Tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) is a promising anti-cancer drug, because it can induce selective apoptosis in many types of tumor cells. However, several types of tumor cells, including the A549 human lung cancer cell line, are resistant to TRAIL treatment due to high autophagy flux. Here we show that hinokitiol, a compound found in cypress, inhibits autophagy flux during TRAIL treatment. We investigated the role of hinokitiol in autophagy-mediated cell death induced by TRAIL in human lung cancer cells using an autophagy inhibitor.

Materials and Methods: The human lung cancer cell line A549 was cultured in RPMI1640 and maintained at 37℃ and 5% CO2. Cells were treated for with EGCG and then exposed to TRAIL,with or without the autophagy inhibitor. Western blotting were performed to detect gene products and proteins involved in ATG5, LC3 and p62 in cancer cells. Knockdown of ATG5 was also performed to investigate whether autophagy is associated with the cell death in cancer cells.

Results: Hinokitiol increased protein expression ofpro-apoptotic factors, including cleaved caspase-3 and cleaved caspase-8, and enhanced TRAIL-mediated cell death. We also found that hinokitiol treatment increased p62 protein expression and accumulation of LC3-II protein. These data indicate that hinokitiol treatment activated autophagy flux in A549 human lung cancer cells. In addition, protein expression of death receptors, including DR4 and DR5, were increased by hinokitiol treatment dose-dependently. Moreover, an autophagy inhibitor enhanced TRAIL- mediated tumor cell death through upregulation of death receptors and inhibition of autophagy flux.

Conclusions: These data indicate that hinokitiol treatment enhanced TRAIL-mediated cell death via upregulation of death receptors due to inhibition of autophagy, and suggest that hinokitiol treatment may have benefits incombination therapy with anti-tumor reagents including TRAIL, especially in TRAIL-resistant cancer cells.

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Infection rate of Internal parasites from of Korean indigenous goats in Jeju

Hyun-Jeong Hwang[1], Ho-Choon Woo[*1]

[1]College of Veterinary Medicine, Jeju National University, Jeju 63243, Korea

Introduction: In an environment of grazing, farmhouses should be well aware of the importance of anthelmintic in Homestead. Even regular anthelmintic treatment, they are constantly exposed to the risk of re-infection caused by contaminated soil. So, we should determine whether the parasite is on a regular basis and shall establish the appropriate treatment measures. While studies have been carried out on endoparasite infection from feces of Korean indigenous goats in multiple areas around the nation, there is no report in northern areas of Jeju Special Self-Governing Province. Based on the above considerations, the objective of the present study was to determine and report the results of the prevalence of gastrointestinal parasites in goats raised by small-scaled indoor and outdoor farms in southern and northern of Jeju, Korea.

Materials and Methods: The study was carried out in on 166 goats without evidence of diarrhea from four farmhouses from southern and northern areas of Jeju special Self-Governing province form August to November in 2015. 50 heads from 'A' farm, 15 heads form 'B' farm, 51 heads from 'C' farm and 50 from 'D'farms. Only one farm was large-scaled farm and