

25%의 지방감소 및 lean meat의 증가가 나타난다고 보고했다. 가금류에서도 Butterwith 등(1991)은 닭의 지방세포 원형질막 단백질을 이용해 면양으로부터 항체를 생산해 낼 수 있었고, 생산된 항체와 닭의 지방세포, 간장, 적혈구세포, 신장, 뇌, 근육 등과 Western immunoblotting을 실시한 결과 항체는 지방세포에 상대적으로 높은 반응력을 나타낸다고 보고했다. 그리고, lactate dehydrogenase(LDH) assay를 통한 *in vitro* cytotoxicity에서도 배양액내 LDH의 수준이 비 면역혈청과 항혈청간의 수치상 상당한 차이가 있음을 보고했다.

본 연구들은 이러한 면역학적 기법을 이용하여 지방세포 원형질막 단백질에 대한 다클론 항체를 생산하고, 항혈청의 특성을 구명함과 아울러 배양중인 지방세포에 대한 항혈청의 세포독성을 검증하였다. 또한 본 연구자들은 항체를 실험동물인 쥐와 주요 육생산 동물인 돼지와 한우에 수동면역시킴으로서, 이들 동물의 체조성 변화를 관찰하였다.

Paper 1. J. Anim. Sci. & Technol. (Kor.) 42(3):261-268. 2000.

***in vitro* cytotoxicity of polyclonal antibodies against proteins isolated from adipocyte plasma membrane of rats**

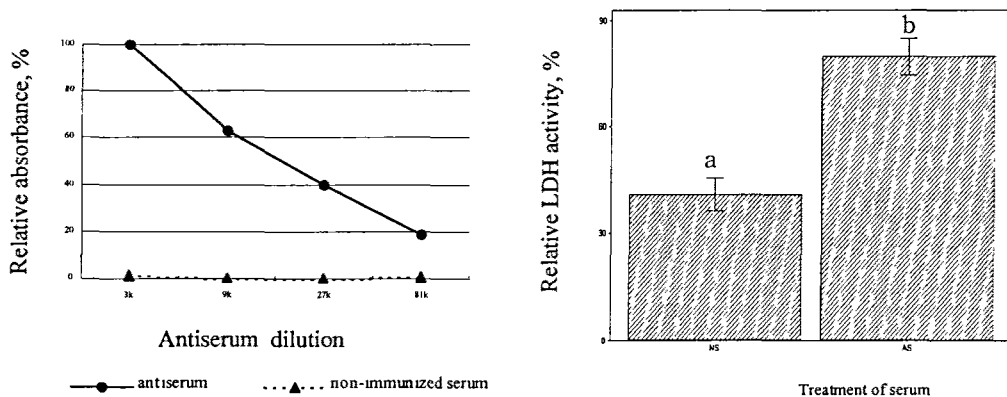
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ABSTRACT

The objectives of the current study were to raise polyclonal antibodies in sheep against adipocyte plasma membrane (APM) proteins isolated from Sprague-Dawley rat, to investigate tissue specificity, and to determine cytotoxic effects of antiserum on cultured rat adipocytes. Plasma membrane proteins from adipocyte, heart, kidney, liver, muscle, and spleen were isolated using an iso-osmotic sucrose self-forming gradient. An adult male sheep was immunized three times at three week intervals with the purified Sprague-Dawley rat APM proteins. Antisera were taken from immunized sheep at 10, 12, and 14 days after the third immunization. Antiserum exhibited strong antigen-antibody reactivity against APM proteins determined by enzyme-linked immunosorbent

assay(ELISA), and the reactivity could be detected at dilutions in excess of 1:81,000. Antisera showed very high reactivity binding with APM proteins in ELISA but showed very low reactivity binding with proteins isolated from heart, kidney, liver, muscle or spleen. Because there may be different kinds of proteins or APM protein quantities. Tissue specificity of the antisera was reconfirmed by Western immunoblotting using anti-sheep immunoglobulin G-alkaline phosphatase conjugate as a secondary antibody. Treatment of antisera on confluent Sprague-Dawley rat adipocytes in culture caused lysis of the cells and release of cytosolic lactate dehydrogenase whereas adipocytes treated with non-immunized serum maintained their integrity.



Paper 2. Korean J. Biomed. Lab. Sci., 4(1):57-63, 1998.

Production of Polyclonal Antibodies Specific to Porcine Adipocyte Plasma Membrane Proteins in Sheep

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ABSTRACT

The objectives of this study were to produce polyclonal antibody to adipocyte plasma membrane (APM) proteins isolated from pig, and to investigate its tissue