

IGF Binding Protein Knock out Mice

Background

Insulin-like growth factor-I binding proteins (IGFBPs) are a family of secretory proteins that bind Insulin-like Growth Factors I and II and thereby modulate their bioavailability to IGF receptors. In addition to IGF-dependent functions IGFBPs also have diverse IGF-independent functions such as migration of vascular smooth muscle cells and inhibition of cellular proliferation.

There are six well characterized IGFBPs whose plasma levels are measurably altered in many disease states including AIDS wasting syndrome, renal failure, malnutrition, diabetes and cancer. Studies have shown that IGFBP-2 may have a role in glucose and nutritional homeostasis. Previous studies in other labs indicate that IGFBP-2, insulin and IGF-II could be possible aetiological factors in prostate cancer progression and there is evidence that IGFBP-2 is overexpressed in certain cancer cells. IGFBP-4 is expressed in osteoblasts and is found in serum and seminal plasma and is an inhibitor of IGF. IGFBP-3 has been shown to have anti-proliferative effects.

Thus, the creation and availability of IGFBP knockout mice would significantly advance research aimed at understanding the potential roles of these binding proteins in cancer, metabolic disorders, reproduction, and other diseases in which they may be involved.

Description of the Technology

UMDNJ investigators have created knockout mice that have disruptions in the gene encoding IGFBP-2, IGFBP-3, IGFBP-4, IGFBP-5 and IGFBP-6. Both single and combinatorial knockout mice have been created. These mice were viable and did not have measurable IGFBPs in circulation.

Deliverables

- . •IGFBP-2,
- . •IGFBP-3,
- . •IGFBP-4,
- . •IGFBP-5
- . •IGFBP-6.
- . •Single and combinatorial knockout mice

Applications

- . •Models for studying role of IGFBPs and IGFs in cancer, metabolic and CNS disorders,
- . •To test therapeutic and diagnostic agents.

Patent Status

- Unpatented technology

Licensing Opportunity

•This technology is available for non-exclusive license.

Contact

Peter Golikov, MS, MBA
Director, Ventures and Licensing
University of Medicine and Dentistry of New Jersey
335 George Street
New Brunswick, NJ 08901
Direct Phone: (732)-235-9355
Main Office Phone: (732)-235-9350
Facsimile: (732)-235-9358
golikope@umdnj.edu

File CABM 96-17, 96-31, 96-32, and 98-11/ John Pintar