GENORACLE

FOX04-DRI

PATIENT EDUCATION SHEET

What is FOX04-DRI?

FOX04-DRI is a member of a larger group of genes that produce transcription factor proteins that are important in growth and differentiation. The FOX04 protein is modified in normal biology by post-translation activities. These modifications alter the DNA binding affinity and, thus, allow it to regulate a host of cellular pathways such as oxidative stress signaling. Cellular senescence, apoptosis, insulin signaling, and the cell cycle itself.

FOX04-DRI aids in:

- Insulin signaling
- Heart disease
- Neurodegenerative disease
- Aging
- Clearing out senescent cells
- Improve organ function

What you need to know about FOX04-DRI:

FOX04-DRI has been clearly demonstrated to boost apoptosis in cells that have become senescent, leading to improved tissue function and better overall health in animal models. It exhibits minimal side effects and excellent bioavailability.

What Is Senescence?

Cellular senescence refers to a state of stable cell cycle arrest in which proliferating cells become resistant to growth-promoting stimuli, typically in response to DNA damage. Senescence was first described by Leonard Hayflick upon the observation that human fetal fibroblasts eventually stopped dividing, but remained viable and metabolically active after prolonged time in culture.

It is now generally accepted that only transformed malignant cells replicate indefinitely, while non-transformed cells do not, with the exception of cell types with stem-like properties. These include endogenous germline and somatic stem cells, in addition to embryonic or induced pluripotent stem cells developed under controlled in vitro conditions. Senescent cells are distinct from both quiescent cells which can reenter the cell cycle and from terminally differentiated cells.

Senescent cells are characterized by morphological and metabolic changes, chromatin reorganization, altered gene expression, and adoption of a pro-inflammatory phenotype known as the senescence-associated secretory phenotype (SASP). The biological role of senescence is complex as both protective and deleterious effects of senescent cells have been described, largely dependent upon physiological context. For example, while senescence has likely evolved as a mechanism to avoid malignant transformation of damaged cells, the onset of senescence may contribute to many age-associated pathologies, including cancer, tissue degeneration and inflammatory diseases.

The terms aging and cellular senescence cannot be used interchangeably. Aging is a progressive decline with time whereas senescence occurs throughout the lifespan, including during embryogenesis. The number of senescent cells increases with age, but senescence also plays an important role during development as well as during wound healing. **View Figure one below to understand how senescence acts as a central hallmark of aging.**