

## FACT SHEET

### ZONA PELLUCIDA ANTIGEN IN OVARIAN CANCER

Pantarhei Bioscience B.V. is an emerging specialty pharmaceutical company with a creative approach towards drug development. The Company is focused on developing innovative, proprietary therapeutic approaches for a variety of gender-related disorders. Within these disease areas, Pantarhei has generated product opportunities based on its unique ability to identify (novel) medical uses for endogenous human biologicals and/or (combinations of) existing drugs.

Pantarhei's approach:

- *Identify novel product concepts;*
- *Evaluate the product concept potential and prioritize;*
- *Seek patent protection;*
- *Conduct pre-clinical proof-of-concept studies;*
- *Select products with the greatest potential for commercial development;*
- *Establish proof-of-concept in man;*
- *Partner with a (bio)pharmaceutical company for the final stages of development and commercialization of its product candidates.*

Pantarhei believes that its differentiating approach towards drug development allows it to strongly benefit from the following key risk-reducing elements:

- *Pharmacology of the basic compound is already well-understood;*
- *Toxicity and safety risk is minimized;*
- *Clinical proof-of-concept can be established at an early stage;*
- *Clinical and regulatory pathways are simplified and relatively short;*
- *The active pharmaceutical ingredient is either available or can be manufactured quickly.*

Active immunization with zona pellucida antigens (ZP) for the treatment of ovarian cancer is a novel strategy. The administration of ZP will result in a T-cell mediated induction of an autoimmune oophoritis in the tumorigenic ovaries. The immune response is directed towards ovary cells having ZP proteins (growing follicles in juvenile and pre-menopausal woman or tumor cells). The ZP induced activated host mechanism will destruct the ovary including tumor tissue. Antigen spreading as a result of the auto immune response will result in a pool of tumor specific T-cells of benefit to also eliminate metastases.

## Zona Pellucida (ZP) Development Rationale

- Concept: Zona Pellucida antigen immunization for the treatment of metastasised ovarian cancer
- ZP immunization destroys the ovaries in animals
- ZP immunization prevents ovarian cancer and metastasis in transgenic mice
- Development:  
ZP protein expression and treatment study in transgenic mice (Prof Ilpo Huhtaniemi, Imperial London, UK and Univ. Turku, Finland)
- Phase I = Proof-of-concept phase IIA study in 15 women with metastasised ovarian cancer
- Orphan drug designation will be requested

