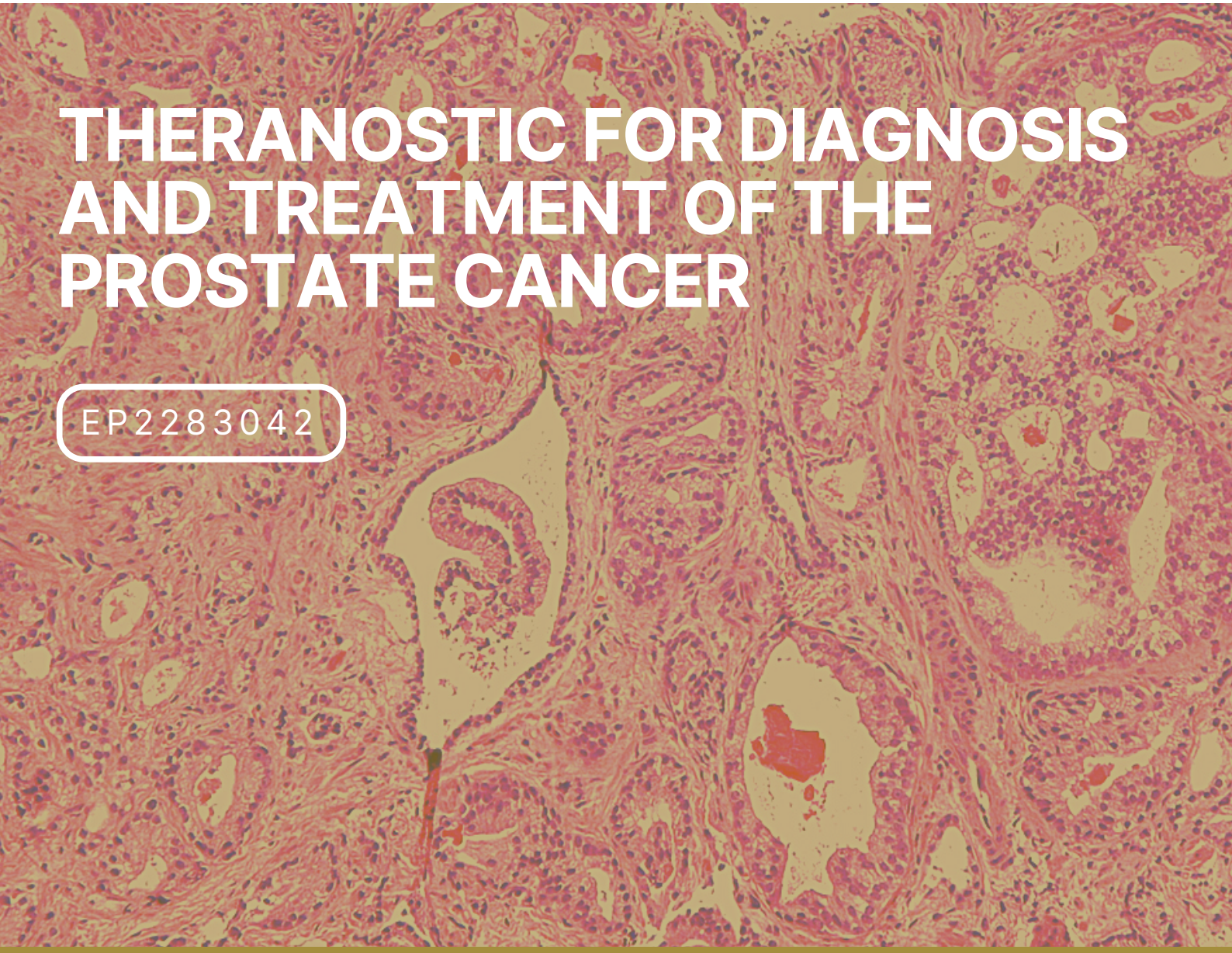
# TTO4IRCCS

LICENSING OPPORTUNITIES

Fondazione IRCCS
Istituto Nazionale dei Tumori

Sistema Socio Sanitario
Regione Lombardia



# THERANOSTIC FOR DIAGNOSIS AND TREATMENT OF THE PROSTATE CANCER

EP2283042

Applications:
- Development of specific radiopharmaceuticals for the diagnosis and treatment of prostate cancer.
- Development of cytotoxic immunotoxins for prostate cancer therapy.
- Development of CAR-T for immunotherapy treatment.

Key benefits:
- Technology that can be easily used by hospital professionals.
- Better clinical outcome for patients due to reduced exposure to radioactive reagent during imaging.
- Greater tissue penetration, maximum recognition specificity, fast unbound clearance and reduced toxicity in therapy.

Offer:
- Licensing out.
- Co-Development.

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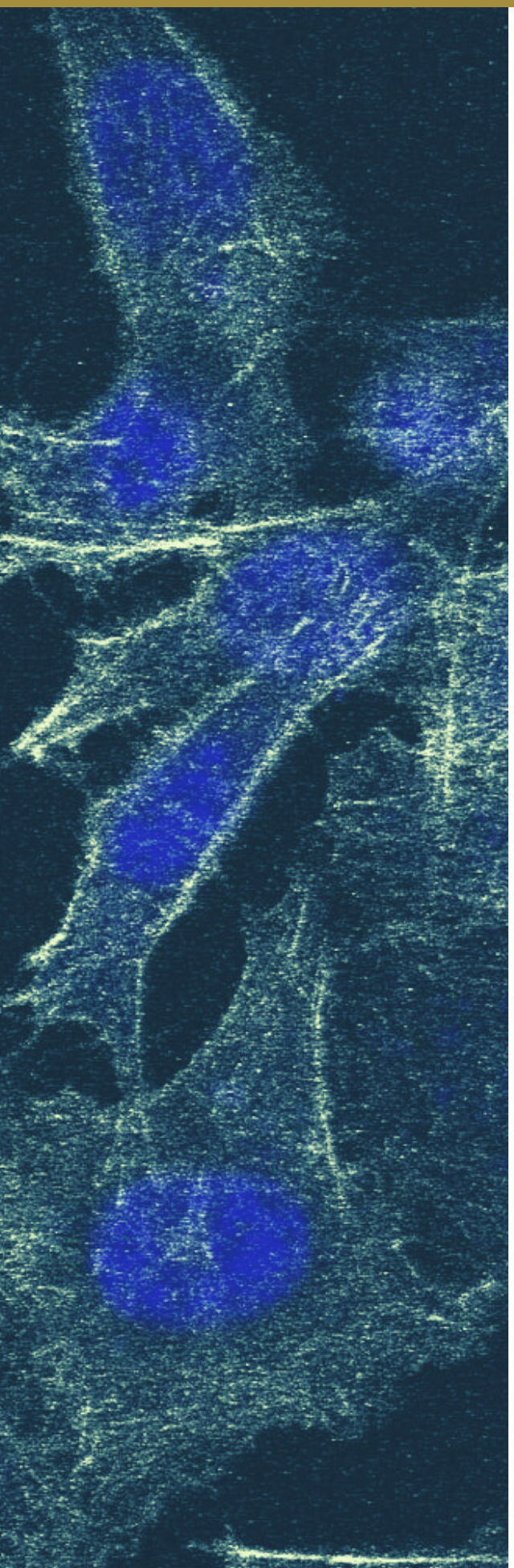

# THERANOSTIC FOR DIAGNOSIS AND TREATMENT OF THE PROSTATE CANCER

INVENTION

The antigen-binding fragment (scFv) of a monoclonal antibody that recognizes prostate-specific membrane antigen (PSMA) on the surface of tumor cells has been patented. The complete antibody and its scFv fragment can be used alone or conjugated with radioactive, cytotoxic or fluorescent substances for the diagnosis, staging and treatment of prostate tumors that express the PSMA antigen.

BACKGROUND

Many PSMA-binding monoclonal antibodies are known. For instance, 7E11, which has been approved by the FDA for the study of metastases expressing PSMA, is a monoclonal antibody that binds the intracellular portion of PSMA. Unfortunately, however, 7E11 does not bind viable cells, but only necrotic or apoptotic cells within a tumour mass. Monoclonal antibodies such as J591, J415, J533 and E99 have subsequently been produced. These antibodies recognise epitopes on the extracellular domain of PSMA and therefore bind viable cells. J591 has in particular been used for several in vitro studies and in animal models both diagnostically and therapeutically and is still under clinical experimental study. Finally, the present invention discloses another monoclonal antibody and an scFv fragment thereof which binds to PSMA.Hereinafter, the term "fragment of the antibody binding the antigen" indicates one or more fragments of this antibody which maintains/maintain the ability to specifically bind PSMA.

TECHNOLOGY

In vivo experiments have shown its extreme binding specificity which makes it a true theranostic, to be used both for diagnostic and staging purposes of prostate cancer, if conjugated to markers for imaging, both for therapeutic purposes, whether conjugated to toxins or to radioactive isotopes. A more accurate diagnosis allows to identify patients with prostate cancer eligible for active surveillance and to postpone the radiation or surgical treatment at the right time, avoiding toxicity and unnecessary complications. The scFV bound to a toxin, a chemotherapeutic or a radioactive source allows a precise treatment and a toxicity limited only to the tumor cells and to the micrometastases. But scFv can also be inserted into the CAR-T recognition molecule to redirect the immune response on the tumor and its metastases.

INVENTORS

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INTELLECTUAL PROPERTY RIGHTS

Patent granted in Europe and USA.

OFFER

Licensing out & co-development.

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