Licensing Opportunity

University &
University Hospital Lausanne

The PACTT is proposing an exclusive or a non–exclusive license on a new treatment for non-muscle invasive bladder cancer (NMIBC) :

Field:

- This invention relates to a pharmaceutical composition comprising a viable attenuated mutant of *Salmonella enterica* serovar Typhi strain (Ty21a) for use in the treatment and prevention of recurrence/progression of NMIBC.

Development Phase:

- In vivo studies to investigate safety issues and unravel antitumor mechanisms of action.
- Clinical phase I trial in preparation in NMIBC patients.

Patent Status:

- International patent application N° PCT/EP2014/059392, with a priority date of May 7, 2013, filed in name of CHUV, naming Nardelli Haefliger D., Jichlinski P., Domingos Pereira S. as inventors. Extended in national phases.

Publication number: WO2014/180929.

Innovative aspects:

- Intravesical instillation of Salmonella Ty21a (thyphoïd vaccine).

Relevant Publication:

- Sonia Domingos-Pereira, Valerie Cesson, Mathieu F. Chevalier, Laurent Derr, Patrice Jichlinski and Denise Nardelli-Haefliger Preclinical efficacy and safety of the Ty21a vaccine strain for intravesical immunotherapy of non-muscle-invasive bladder cancer, ONCOIMMUNOLOGY 2017, Vol. 6, NO. 1

Additional information on request (N° Ref. IDF 19/12)

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A Safer and more Efficient Treatment for non-muscle invasive bladder cancer (NMIBC)

Background

Bladder cancer is the 4th most common cause of cancer in Europe and USA. ¾ of tumors are non muscle-invasive at diagnosis. Intravesical immunotherapeutic treatment with Bacillus Calmette-Guerin (BCG) after transurethral resection of tumors can reduce recurrence/progression of bladder cancer, although not in all patients and/or with significant side effects.

Description of the invention

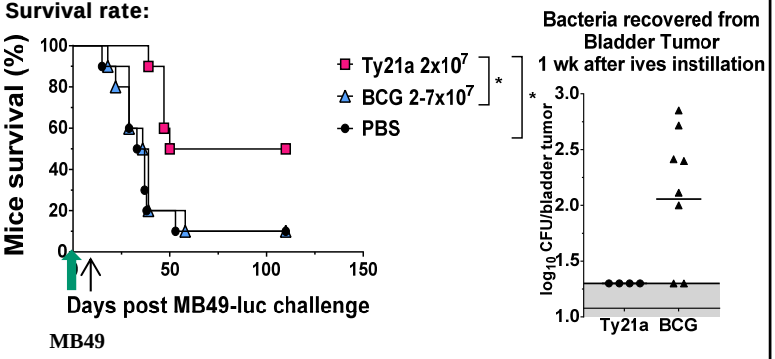
The invention relates to the replacement of BCG by *Salmonella enterica* serovar Typhi, Ty21a, for the treatment and prevention of recurrence/progression of NMIBC. In preclinical models of bladder cancer, Ty21a induce tumor regression more efficiently than BCG. In addition, in contrast to BCG, Ty21a does not infect/persist in the urothelium and only induces a transient inflammation, both leading to an improved safety.

Proof of concept

Ty21 applied intravesically in mice harboring day 5 MB49 bladder tumors led to 50% of mice survival as compared to 10% in mice treated with PBS or BCG. No Ty21a bacteria are recovered from bladder tumors 7 days after intravesical instillation in contrast to BCG.

Typical results:

Survival rate:



Applications

Intravesical instillation of Salmonella Ty21a is applicable for non invasive bladder cancer

Competitive advantages

- Prevent recurrence and progression of bladder cancer
- Safer and more efficient than reference treatment (BCG). Does not survive/persist in urothelium
- Drug already approved for oral administration since more than 30 years
- Associations with different treatments possible