

IN VIVO ISOLATION OF CTCs



CUTTING EDGE TECHNOLOGY

- ☒ *In vivo* isolation of CTCs from the **whole volume of peripheral blood**
- ☒ Technology taking advantage of magnetic nanoparticles coated with a monoclonal antibody that are injected into the bloodstream via an intravenous cannula, as well as of a special wire comprising a magnetic core coated with a non-magnetic mantle

STAGE OF PROTECTION AND DEVELOPMENT

- ☒ Granted European patent (EP3052026 (B1)) valid in Germany and France
- ☒ Granted Slovak patent (No. 288562)
- ☒ TRL 2 - technology concept and/or application formulated

APPLICATIONS

- ☒ Molecular diagnostics of cancer and personalised medicine

COMPETITIVE TECHNOLOGY

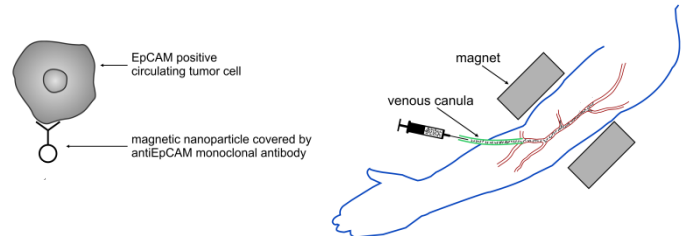
- ☒ ***In vivo*** isolation of CTCs and/or CSCs
- ☒ Isolation of CTCs and/or CSCs from the **whole volume of patient's blood**
- ☒ Detection of CTCs and/or CSCs in **very low concentrations**
- ☒ **More effective** than available solutions
- ☒ **Universal solution** that may be adapted to any type of blood cells
- ☒ **Easy and straightforward manipulation**

THE INVENTORS ARE LOOKING FOR AN INDUSTRIAL PARTNER FOR FURTHER DEVELOPMENT AND FOR LICENSING/SELLING THE TECHNOLOGY

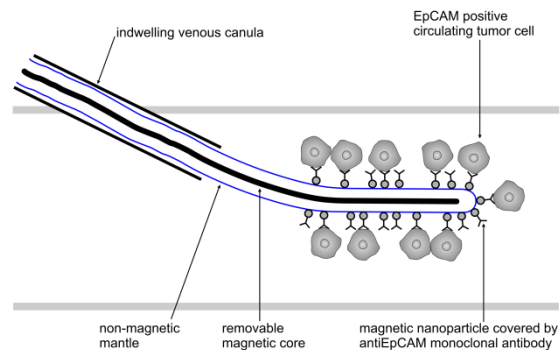
TECHNICAL DETAILS

Principle of function:

- ☒ Magnetic nanoparticles coated with a monoclonal antibody are injected into the vein through a venous cannula, while their position is controlled using magnets



- ☒ The nanoparticles are exposed to circulating tumor cells
- ☒ After *in vivo* incubation the nanoparticles are moved closer to the venous cannula by the movement of large magnets and a special wire comprising a magnetic core coated with a non-magnetic mantle is inserted through the cannula into the blood stream
- ☒ Large magnets are removed and nanoparticles are attracted by the magnetic wire



- ☒ Magnetic wire coated with nanoparticles with attached CTCs is removed from the cannula and placed in a test tube with a suitable medium
- ☒ The magnetic core is removed and the nanoparticles with attached CTCs are released into the medium for further analysis

FOR MORE INFORMATION PLEASE CONTACT

Ing. Martin Gróf, PhD.
phone: +421 904 983 265
email: grof.martin@savba.sk



The inventors use services of Technology Transfer Office of Slovak Academy of Sciences to market their invention.