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)) validated 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

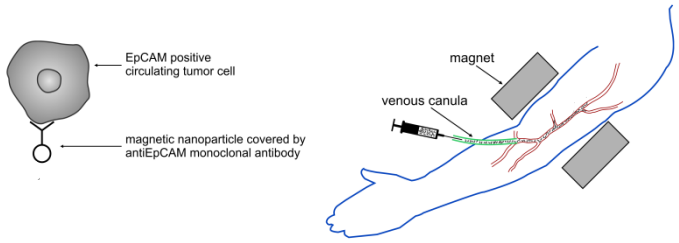
- ***In vivo*** isolation of CTCs and/or CSCs
- Isolation of CTCs and/or CSCs from the **whole volume of patient's blood**
- Detection of CTCs and/or CSCs in **very low concentrations**
- **More effective** than available solutions
- **Universal solution** that may be adapted to any type of blood cells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

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

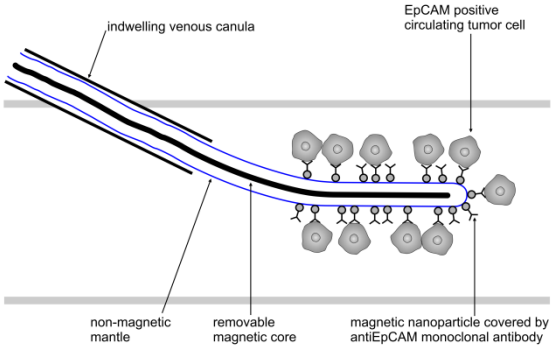
TECHNICAL DETAILS

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

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