Docket #: S23-351

Antibodies Directed Against Osteopontin and Thrombin-cleaved Osteopontin

Osteopontin is a protein involved in the pathogenesis of cancer and chronic inflammatory diseases. Antibodies are a powerful tool that can be used to target this protein and regulate its pathway.

Lawrence Leung and his lab at Stanford have developed humanized antibodies directed against osteopontin and thrombin-cleaved osteopontin to enable the treatment of patients without causing an immune response directed against the antibody. Previously, the inventors have identified antibodies for various proteolytic cleavage fragments of osteopontin, where each cleaved fragment has different effects from the original protein. Here, the inventors generated humanized versions of these antibodies and validated their efficacy in rodent models of cancer. The panel of antibodies developed inhibit the growth of mouse melanoma and colon cancers as well as reducing scarring of wounds and skin fibrosis. The invention not only opens new pathways for utilizing antibodies as cancer therapeutics, but also enables the development of early diagnostic methods for related cancers. In addition, the antibodies can be used to treat patients with wounds to reduce scarring and skin fibrosis.

Stage of Development
Research – in vivo

Applications

- Cancer therapeutics
- Reducing scarring
- Reducing fibrosis

- Antibody diagnostic and screening methods

Advantages

- No currently available humanized version of osteopontin antibody.
- Ability to reduce scarring following wounding.

Patents

- Published Application: WO2026151869

Innovators

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