

# 14-3-3 Cancer therapeutic

INVENTION No. 20120003

A novel class of 14-3-3 targeting anti-cancer drugs

## Benefits

- A novel class of molecules with a unique mode of action
- Molecules inhibit 14-3-3 proteins without competing with other cellular proteins
- Effective in multiple cell lines and animal models

## Background

Lung cancer is one of the most common forms of cancer with an estimated 2.1 million new cases diagnosed every year. It is also the global leading cause of cancer-related death with 1.8 million deaths reported annually.

There's an unmet need for effective pharmacological therapies for many subtypes of lung cancer, particularly advanced disease where more than 80% of patients are diagnosed.

Proteins that regulate cell survival and growth have emerged as promising drug targets for cancer therapy. The 14-3-3 proteins are crucial in regulating cell signalling to promote cell survival and growth.

The majority of lung tumours have an increased amount of 14-3-3 protein and enhanced 14-3-3 protein abundance is predictive of poor patient prognosis in Non-Small Cell Lung Cancer (NSCLC). Thus, the inhibition of 14-3-3 proteins is an attractive option for treating NSCLC.

## Technology

The UniSA research team has developed small molecules that can inhibit the activity of 14-3-3 proteins.

Other 14-3-3 inhibitors in development compete with cellular proteins to bind and inhibit 14-3-3 proteins. This competition for binding necessitates the use of an unfeasibly large excess of such molecules to be therapeutically effective.

UniSA's molecules have the key competitive advantage of not competing with cellular proteins to bind 14-3-3. Moreover, inhibition of 14-3-3 proteins reverses the cancerous state without affecting normal cells.

The therapeutic benefit of our molecules has been demonstrated in multiple cell lines as well as animal models. Further work is underway to establish a comprehensive preclinical data pack towards clinical entry.

## Potential Markets

The small molecule 14-3-3 inhibitors can be used in the anti-cancer therapeutic market.

## IP Status

The technology is currently covered by two patent families:

Patent 1:  
AU 2011235595 Granted

Patent 2:  
PCT/AU2015/000605  
Granted in the US. Pending in AU.

## Partnering Opportunities

We are seeking co-development partners and technology licensees for the development of anti-cancer therapeutics.

## Contact Us

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