

TECHNOLOGY OFFERS

Wnt Pathway Inhibitor: New Substance Class for Promising Novel Anti-Tumor Agent (P-916)

A lead compound for Wnt pathway inhibition in chemotherapy, with low nM IC50 and good in vivo specificity and tolerability

EXECUTIVE SUMMARY

The Wnt signalling pathway plays an important role in the regulation of cell proliferation and differentiation. Aberrant activation of the Wnt signalling pathway is known to promote uncontrolled cell growth and survival and can therefore be a major driving force in a broad spectrum of human cancers and diseases such as colon, skin, liver and ovary cancer. For example, the inhibition of aberrant Wnt signalling pathway activity in cancer cell lines effectively blocks their growth¹. Other disorders and diseases are considered to be influenced by an aberrant Wnt signaling pathway, too (see e.g. literature Baker et al. below).



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https://commons.wikimedia.org/wiki/File:Patient_receives_chemotherapy.jpg

Category

Therapeutics

Indication

Various
Cancers

Development stage

Pre clinical

Seeking

Licensing, Development
Partner

BENEFITS

- Low nM IC50 against colon cancer (stem) cell lines
- Specificity (in epistasis and suppression of double axis formation)
- Good CYP/kinase & hERG-profiles, metab. stab., t1/2/AUC (mice), solubility
- In vivo efficacy and tolerability of substance class (mouse)
- Solid IP protection

TECHNOLOGY BACKGROUND

The systematic evaluation of Structure Activity Relationships (SAR) of several 100 hit variants have been investigated to yield a lead structure. Intensive medicinal chemistry on the lead compound improved the pharmacologic profile.

DEVELOPMENT STAGE

The lead compound shows low nM IC50 against colon cancer (stem) cell lines and specificity in epistasis and suppression of double axis formation. PD analyses revealed good CYP/kinase & hERG-profiles, metabolic stability as well as promising t1/2/AUC in mice. Further optimization of in vitro & in vivo ADMET is ongoing.

APPLICATIONS

Development of a small molecule drug candidate for chemotherapy of cancer types such as colon, skin, liver and ovary cancer.

INTELLECTUAL PROPERTY

Patent application submitted.

- WO2012062901A2 & WO2012062905A2
- Nationalized in USA (US9371333B2 - granted), Europe (EP2638026B1 - granted), Japan (JP5926272B2 – granted), Canada (CA2817331C – granted), Australia (AU2011328074B2 - granted), China (CN107235954A).

PUBLICATIONS & REFERENCES

- N. Barker and H. Clevers "Mining the Wnt pathway for cancer therapeutics", [Nature Reviews, vol. 5, 2007, pages 997-1014](#)
- R. Nusse, "Wnt signalling in disease and in development", [Cell Research, Vol. 15, 2005, pages 23-32](#).

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ABOUT THE DKFZ INNOVATION MANAGEMENT

Working at the interface of research and industry, the Innovation Management of the German Cancer Research Center (DKFZ) helps to get new cancer medications, diagnostic tests, and research instruments onto the market as quickly as possible.

The DKFZ with its more than 3,000 employees is the largest biomedical research institution in Germany. At the Center more than 1,300 scientists investigate how cancer develops, identify cancer risk factors and endeavor to find new strategies to prevent people from getting cancer. They develop novel approaches to make tumor diagnosis more precise and treatment of cancer patients more successful. DKFZ is a member of the Helmholtz Association of National Research Centers, with ninety percent of its funding coming from the German Federal Ministry of Education and Research and the remaining ten percent from the State of Baden-Württemberg.