Title of Invention

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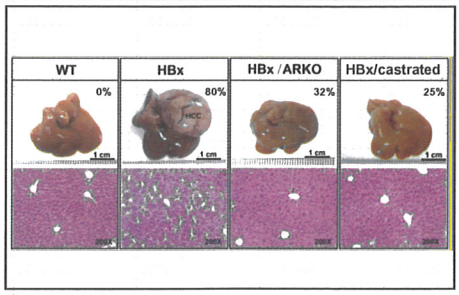

Experience : Please find the web link as listed below

http://clinicalmedicine.mc.ntu.edu.tw/Introduction/faculty/Pages/%E9%99%B3%E5%9F%B9%E5%93%B2.aspx

Market Needs :

Several epidemiological cohort studies have indicated that higher androgen/AR pathway activity is one major risk factor for liver cancer in men. We have proved the critical role of this pathway in early hepatocarcinogenic process in the HBx transgenic mouse model, in which >90% of male mice developed hepatocellular carcinoma (HCC). Both knockout of hepatic AR and early castration significantly decrease the tumor incidence, indicating this androgen/AR pathway a druggable target for prevention of liver cancer in male patients. Currently, there are numerous regimens available to inhibit the AR pathway activity, especially for treating the prostate cancers. However, all of these regimens function via the canonical AR pathway, which inhibit the AR axis in all tissues, including the reproductive organs, and thus are not appropriate as chemopreventive agents that will be used for the long-term treatment of patients with chronic hepatitis. Therefore, development of new regimens which can block this AR pathway specifically in liver but not affect its physiological function in other tissues is an urgent demand for male patients in high risk for liver cancers.

Our Technology :

We have identified that Sorafenib and its derivatives, the SC compounds, can suppress the aberrantly elevated AR activity specifically in liver, through activating the liver-enriched SHP-1 phosphatase. These drugs significantly inhibited AR activity in the liver of male HBx transgenic mice but not in the livers of WT mice or in the testes of either mouse strain. The higher expression level of hepatic SHP-1 provides a better drug responsiveness for activation of SHP-1 in liver, but with less responsiveness in testis due to its very low expression. This liver-enriched expression of SHP-1 has also been validated in the human specimens, with 3- to 9-fold higher level in liver than in testis.

Strength :

Based on our study, we expect Sorafenib and its derivatives, the SC compounds, can function as a new group of selective androgen receptor modulators (SARMs), which selectively inhibit the aberrant hepatic AR pathway activity to prevent the development of liver cancers in male patients but not affect the normal AR function in other tissues. We expect these drugs will provide a significant advantage over the current anti-androgen compounds for chemoprevention in chronic hepatitis patients without causing chemical castration.

Competing Products :

As checked in the literature, no similar drugs have been reported to target the liver disease specific AR activity without causing systemic side effects.

Intellectual Properties :

The related scientific publications are listed in the enclosure.

Contact (do not need to fill out) :

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