

## **Study on the effects of scutellarein decrease the proliferation through the EGFR inhibition of human lung cancer line A549**

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Human lung cancer cell line A549 has a strong ability in proliferation.

Cyclooxygenase-2, which can induce hyperplasia in the cells, highly expression is one of the major reasons. Scutellarein is a compound, as flavonoids, with anti-oxidant and anti-inflammatory activity. In this work, we screened the various concentrations (0, 5, 25, 50 $\mu$ M) of scutellarein in medium and cultured with A549 cell line for 48h. After the incubation with 50 $\mu$ M scutellarein for 48h, A549 cell line proliferation ability decreased more than 50%. Further, the protein analysis discovered that the growth inhibition of A549 was administrated by epidermal growth factor receptor (EGFR) pathway. Scutellarein treatment can decrease extracellular regulated protein kinases (ERK) activation , and decreased the expression of nuclear factor  $\kappa$ B (NF $\kappa$ B). Finally, scutellarein treatment inhibited the COX2, which is the down stream target of EGFR pathway, and inhibited the proliferation of A549 cell line.

**Keywords:** A549 cell line; scutellarein; cyclooxygenase-2