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## The Effect of a Novel Quinazoline Derivative Operating on EGFR Kinase Activity in Human Lung Carcinoma.

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Epidemal Growth Factor Receptor (EGFR) is a kind of type 1 receptor tyrosine kinase or ErbB receptor, and divided into four kinds, namely, EGFR (ErbB1/EGFR/HER1), ErbB2 (HER2/*neu*), ErbB3 (HER3) and ErbB4 (HER4). ErbB receptor is divided into extracellular ligand-binding domain, transmembrane domain, intracellular tyrosine kinase (TK) domain. The over-expression and loss of self-regulation of EGFR gives rise to various solid tumors. Therefore, the inhibitors preventing EGFR kinase activity can be the effective medicine for cancer and other proliferative diseases, and in this respect, a variety of researches on inhibitors have recently been conducted. Quinazoline is a compound made up of two fused six-membered simple aromatic rings, a benzene ring and a pyrimidine ring. Medicinally it has been used in various areas especially as an anti-malarial agent and in cancer treatment. New compounds possess a [1,4]-dioxino quinazoline structure linking the alkoxy side chains together, because their structural characteristic is considered to have better solubility than dialkoxyquinazoline derivatives. The purpose of this study was to investigate the inhibitive effects of EGFR kinaes activities by novel quinazoline derivatives. New compounds inhibit EGFR phosphorylation on each tyrosine residues and inhibit the activities of EGF-related downstream molecules in human lung carcinoma.

**Key words:** EGFR, EGFR inhibitors, Quinazoline derivative

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## Characteristics of the Mineral Precipitation in the Soil of the upper Banbyun stream area

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The present study was undertaken to investigate suspended matter in soils of the Banbyun stream area by turbidity. Soil sampling was conducted on 5 sites of Yeongyang(turbid area) and 2 sites of Cheongsong (clean area). The pH of water within the soils from turbid area was higher than that from clean area. But as time passes, the pH of water was similar as to all samples. X-ray diffraction analysis showed that every samples consist of mainly quartz, illite and feldspar before precipitation. The content of quartz and feldspar was decreased but the content of illite was increased after precipitation for 3 days in turbid area, and the content of suspended particles consist of mainly quartz and illite in clean area. SEM-EDS analysis showed the much content of $SiO_2$ as to every samples before precipitation, but $K_2O$, $MgO$, $Al_2O_3$, $CaO$ and $Fe_2O_3$ with illite was increased after precipitation for 3 days as to every samples. We have studied that the major mineral of turbid water was illite in turbid area and the major mineral of turbid water was quartz and illite in clean area.

**Key words:** Turbidity, precipitation, x-ray diffraction analysis, SEM-EDS analysis