Gefitinib is a selective inhibitor of epidermal growth factor receptor (EGFR) tyrosine kinase that binds competitively in the ATP binding pocket with \( IC_{50} \) values of 23 and 80 nM for A431 vulval squamous carcinoma cells and KB cells, respectively (Barker et al.).

**Product Description**

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- **Molecular Name:** Gefitinib
- **Alternative Names:** Gefonib; ZD1839
- **CAS Number:** 184475-35-2
- **Chemical Formula:** \( \text{C}_{22}\text{H}_{24}\text{ClFN}_{4}\text{O}_{3} \)
- **Molecular Weight:** 446.9 g/mol
- **Purity:** \( \geq 98\% \)
- **Chemical Name:** N-(3-chloro-4-fluorophenyl)-7-methoxy-6-(3-morpholin-4-ylpropoxy)quinazolin-4-amine

**Structure:**

![Structure of Gefitinib](image)

**Properties**

- **Physical Appearance:** A crystalline solid
- **Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light.
  
  Stable as supplied for 12 months from date of receipt.
- **Solubility:**
  - DMSO \( \leq 40\text{ mM} \)
  - Absolute ethanol \( \leq 0.7\text{ mM} \)
  
  For example, to prepare a 10 mM stock solution in DMSO, resuspend 500 mg in 112 mL of DMSO.

  Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

  Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.
Published Applications

CANCER RESEARCH
- Blocks proliferation of multiple cancer cell types in vitro and in mouse xenograft models, including colon, ovarian, and breast cancer cell lines (Ciardiello et al.).
- Induces apoptosis in the HaCaT human keratinocyte cell line via a c-Jun N-terminal kinase (JNK) activation, an EGFR-independent mechanism (Lu et al.).

References

Related Small Molecules
For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).