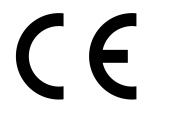
**Instruction and Application Manual**

**LSI EGFR(Orange)/CEP7(Green)**

-18ºC

**   **  ****

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### Probe location on chromosome

**7p12 (125KB)**

D7S2935

EGFR

SHGC-146751



7p11.1-q11.1

**Probe description**

**The LSI EGFR FISH kit is intended for the determination of EGFR gene status in human tissues using fluorescence *in situ* hybridization (FISH).**

**The EGFR FISH kit is CE marked and can be used for in vitro diagnostic tests.**

The EGFR FISH kit contains two directly labeled fluorescent DNA probes in hybridization buffer. The fluorochrome Orange labeled EGFR probe covers the chromosome 7p12 region. The fluorochrome Green labeled chromosome enumeration CEP7 probe covers the chromosome 7p11.1-q11.1 region.

The EGFR gene codes for the epidermal growth factor receptor (HER1, erbB-1). EGFR gene plays an important role in the regulation of the cell cycle, cell proliferation, differentiation, and the epidermal tissue cell survival. Mutations, amplifications or misregulations of EGFR gene have been associated with a number of cancers, e. g. lung cancer, colorectal cancer, breast cancer and glioblastoma.

### FISH results

Normal cell (Fig.1a) shows 2 orange signals (EGFR) and 2 green signals (chromosome 7). An abnormal cell (Fig.1b) shows chromosome 7 polysomy and higher copy number of EGFR gene. In Fig.1c an abnormal cell shows higher copy number of EGFR gene and 2 copies of chromosome 7 (amplification).

It exist more systems for EGFR scoring although contemporary, CAP recommended Colorado University System is the most used (Lindeman 2013).

|  |  |  |
| --- | --- | --- |
| [fyziologický stav genu EGFR vyšetřeného sondou LSI EGFR (Orange) a CEP7 (Green) - parafínový řez](http://www.intellmed.eu/_data/section-2/91.jpg) | [Nepravá amplifikace genu EGFR vyšetřeného sondou LSI EGFR (Orange) a CEP7 (Green) - parafínový řez](http://www.intellmed.eu/_data/section-2/15.jpg) | [Pravá amplifikace genu EGFR vyšetřeného sondou LSI EGFR (Orange) a CEP7 (Green) - parafínový řez](http://www.intellmed.eu/_data/section-2/16.jpg) |
| 1a | 1b | 1c |

Fig. 1. Assessment of the copy number of EGFR gene and the copy number of chromosome 7 on FFPE tissue.

red EGFR        
green CEP7  
1a) Two copies of EGFR gene as well as chromosome 7 (physiological finding).

1b) Polysomy of chromosome 7 with a higher copy number of EGFR gene (amplification).

1c) Normal copy number of chromosome 7, higher copy number of EGFR gene (amplification).

### References

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