

# Receptor tyrosine kinase expression and their role in the response to target therapy in bronchopulmonary NET

Teresa Gagliano, Katuscia Benfini, Erica Gentilin, Simona Falletta, Marta Bondanelli, Carmelina Di Pasquale, Eleonora Riva, Ettore degli Uberti, Maria Chiara Zatelli

Department of Medical Sciences, Section of Endocrinology and Internal Medicine, University of Ferrara, Italy

## Background

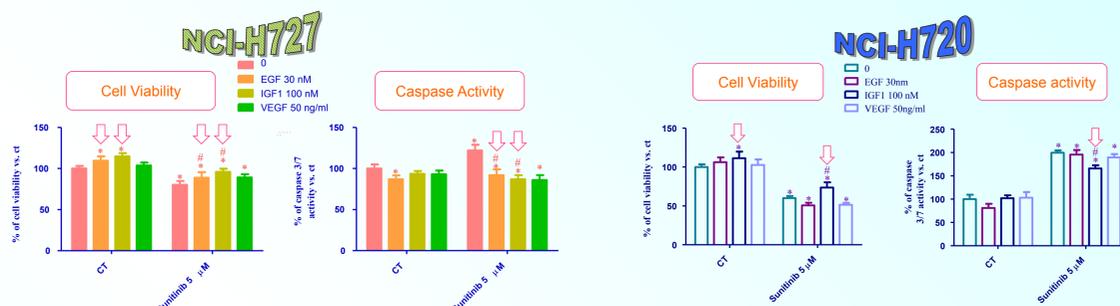
Surgery is not feasible for infiltrating and metastatic bronchopulmonary NET (BP-NET). In those cases, medical therapy is tried with controversial results. Thus, it is important to identify new therapeutic targets to provide adequate medical treatment for patients with BP-NET. Sunitinib, is a multi-targeted receptor tyrosine kinase inhibitor (TKI), mainly described to inhibit VEGFR.

## AIM

The aim of our study is to verify whether Insulin Receptor (IR), IGF1R and EGFR could be involved in Sunitinib mechanism of action in BP-NET cells.

## Results

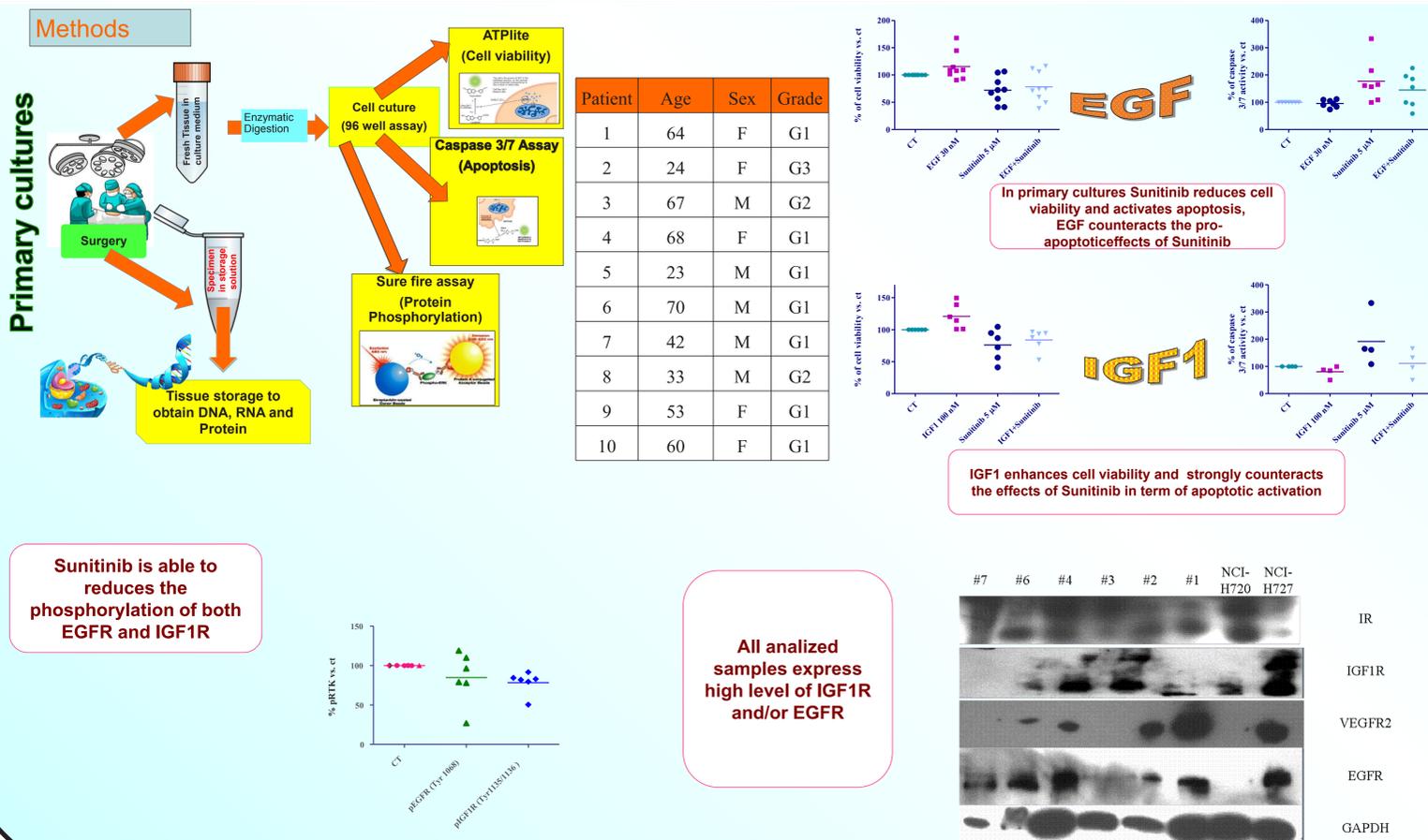
BP-NET cell lines were treated with Sunitinib and/or EGF, IGF1, or VEGF. Cell viability and caspase 3/7 activation were measured after 48 h of treatment



In NCI-H727 cells, Sunitinib reduces cell viability and activates apoptosis, both EGF and IGF1 enhance cell viability and counteract the effects of Sunitinib

In NCI-H720 cells Sunitinib reduces cell viability and activates apoptosis only IGF1 enhance cell viability and counteract the effects of Sunitinib

In BP-NET cell lines EGF and IGF1 influence the antiproliferative activity of Sunitinib, VEGF fails to influence cell viability and to counteract the effects of Sunitinib



## CONCLUSION

These data indicate that the expression of EGFR and IGF1R are important for Sunitinib action in BP-NET. The effects of Sunitinib on BP-NET cell viability could be due to a double inhibition of EGFR and IGF1R, while the role of IR needs to be further investigated

