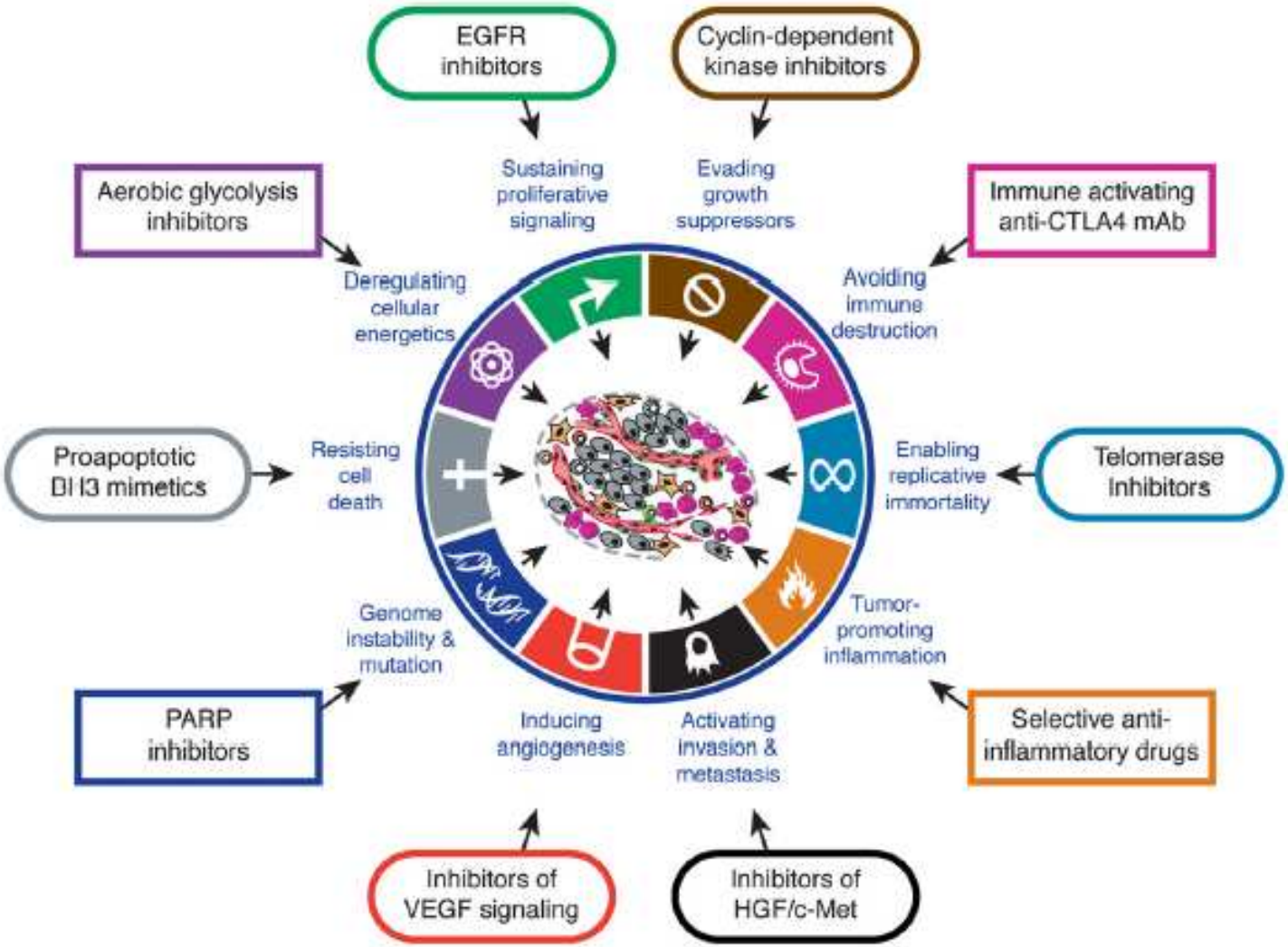
PERSONALIZED CANCER CARE: WHAT DOES IT MEAN?

THE ASPIRATION TO BASE A TREATMENT ON THE UNIQUE BIOLOGICAL FEATURES OF A PATIENT'S DISEASE THROUGH THE IDENTIFICATION OF VALIDATED BIOMARKERS OF RESPONSE/RESISTANCE TO THERAPY

AIMS

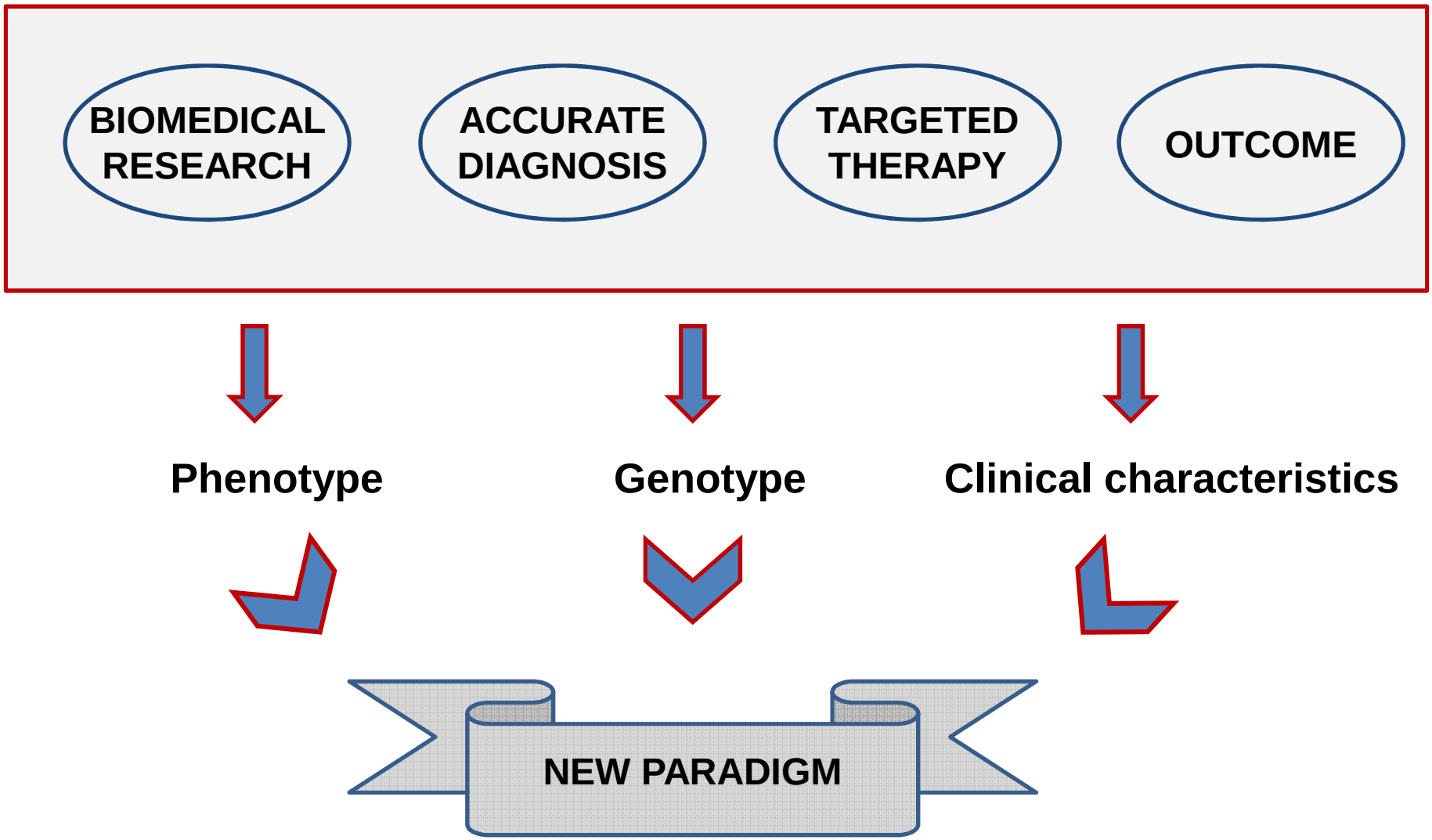
- ***TO IMPROVE DRUG EFFICACY***
- ***TO AVOID INAPPROPRIATE DRUG EXPOSURE (PRIMARY RESISTANT TUMORS)***
- ***TO MAXIMIZE QUALITY OF LIFE***
- ***TO SPARE UNNECESSARY COSTS***

THERAPEUTIC TARGETING OF THE HALLMARKS OF CANCER

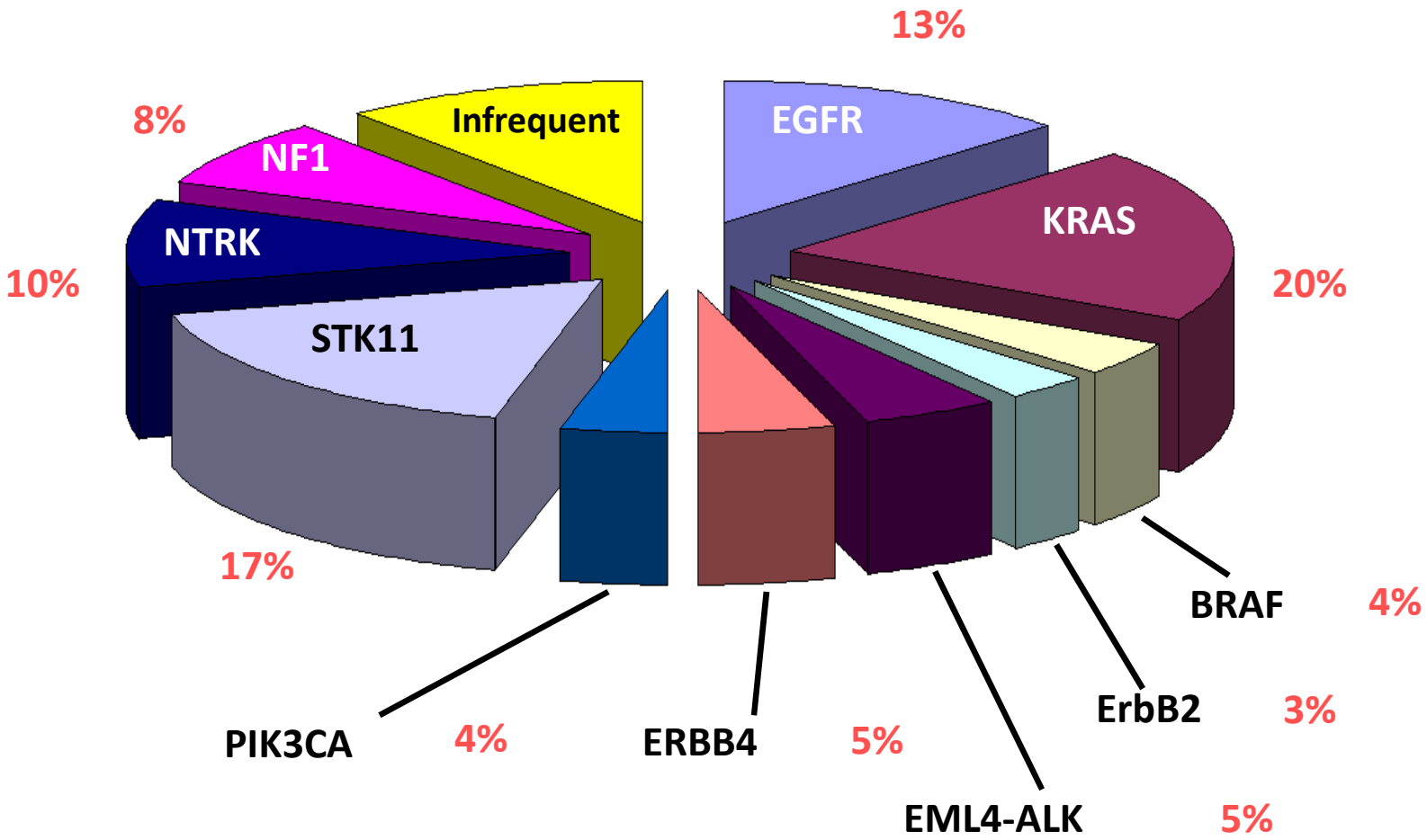


Hanahan & Weinberg, Cell, 144:646, 2011

PRECISION MEDICINE IN ONCOLOGY

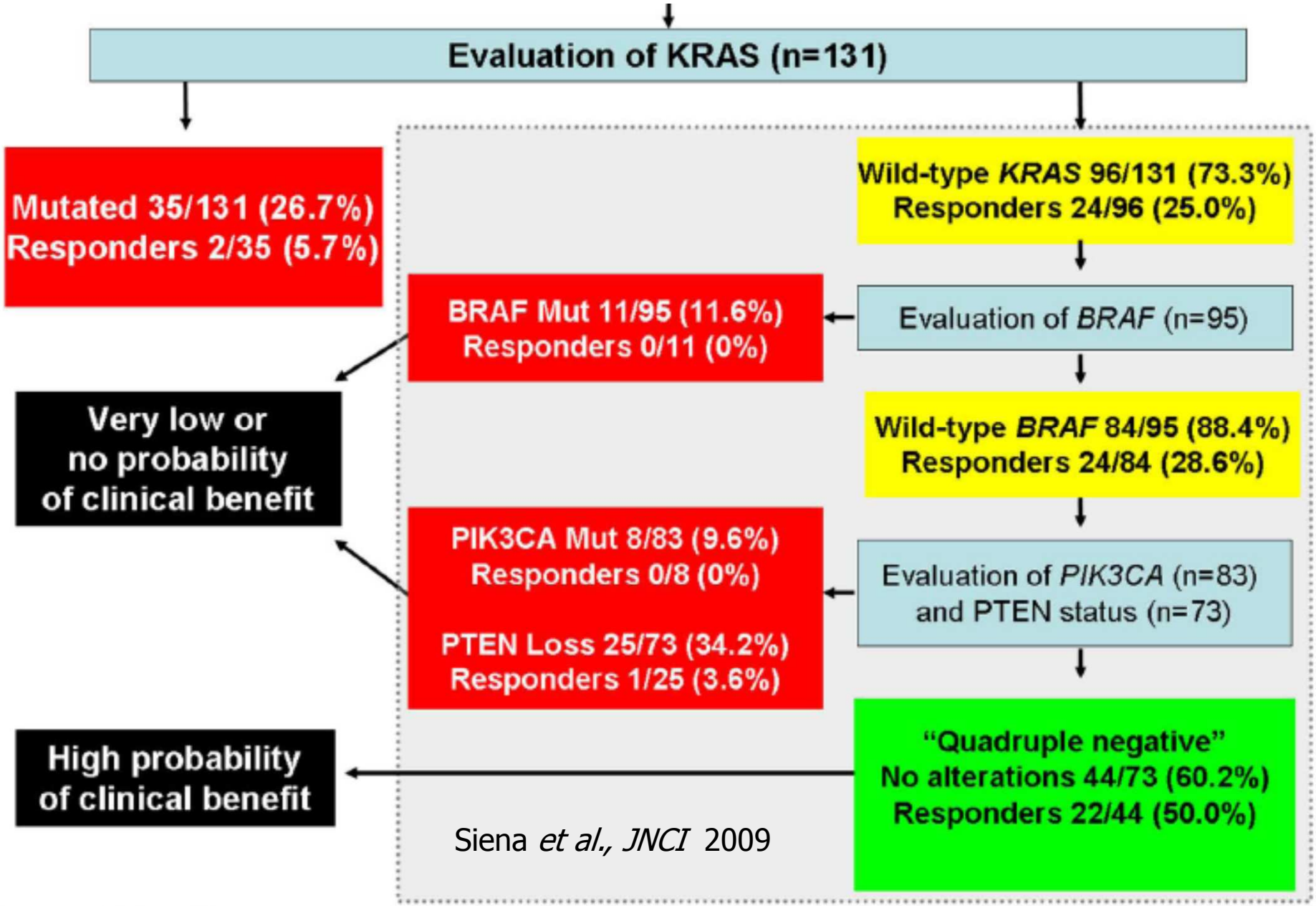


GENETIC MUTATIONS IN LUNG ADENOCARCINOMAS



Adapted from: Nature. 455: 1069–1075. 2008

RESULTS ON 131 PATIENTS



Siena *et al., JNCI* 2009

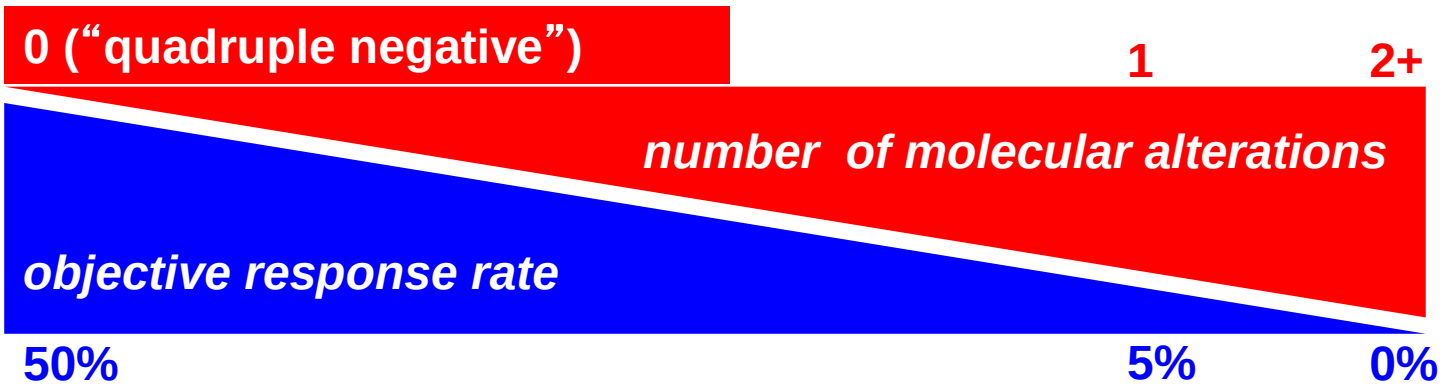
MULTIPLE MOLECULAR ALTERATIONS EFFECT ON RESPONSE TO anti-EGFR mAbs

Because of the occurrence of **multiple molecular alterations** within the same tumor, we investigated **a cohort of 131 patients treated with EGFR-targeted moAbs in the chemorefractory setting** by separating patients according to the actual number of molecular abnormalities within the same tumor (i.e. none *vs* 1 *vs* ≥2 alterations) among *KRAS*, *BRAF*, *PIK3CA* mutations and loss of PTEN.

The probability of response was:

- ✓**50.0%** (22/44) among patients with no alterations,
- ✓**4.2%** (2/47) among patients with 1 alteration and
- ✓**0%** (0/23) for patients with ≥2 alterations,

} (p<0.0001



Sartore-Bianchi A et al. PLoS One 2009