

Genotyping non-small cell lung cancer (NSCLC) in latin America

[Arrieta, O.^{a,n}](#) ⁿEmail Author, [Cardona, A.F.^{b,c}](#), [Federico Bramuglia, G.^{d,e}](#), [Gallo, A.^f](#), [Campos-Parra, A.D.^a](#), [Serrano, S.^c](#), [Castro, M.^e](#), [Avilés, A.^a](#), [Amorin, E.^g](#), [Kirchuk, R.^h](#), [Cuellar, M.ⁱ](#), [Borbolla, J.^{j,k}](#), [Riemersma, O.^l](#), [Becerra, H.^b](#), [Rosell, R.^m](#)

^aThoracic Oncology Clinical and Experimental Oncology Laboratory, Instituto Nacional de Cancerología de México, México D.F., México

^bClinical and Translational Oncology Group, Fundación Santa Fe de Bogotá, Bogotá, Colombia

^jMedical School, Instituto Tecnológico de Monterrey, Monterrey, Nuevo León, México

Introduction: Frequency of mutations in EGFR and KRAS in non-small cell lung cancer (NSCLC) is different between ethnic groups; however, there is no information in Latin-American population. **Methods:** A total of 1150 biopsies of NSCLC patients from Latin America (Argentina, Colombia, Peru, and Mexico) were used extracting genomic DNA to perform direct sequencing of EGFR gene (exons 18 and 21) and KRAS gene in 650 samples. In Mexico, Scorpions ARMS was also used to obtain a genetic profile. **Results:** We report the frequency of mutations in EGFR and KRAS genes in four Latin-American countries (n = 1150). Frequency of EGFR mutations in NSCLC was 33.2% (95% confidence interval [CI] 30.5-35.9) (Argentina 19.3%, Colombia 24.8%, Mexico 31.2%, and Peru 67%). The frequency of KRAS mutations was 16.6% (95% CI 13.8-19.4). EGFR mutations were independently associated with adenocarcinoma histology, older age, nonsmokers, and absence of KRAS mutations. Overall response rate to tyrosine kinase inhibitors in EGFR-mutated patients (n = 56) was 62.5% (95% CI 50-75) with a median overall survival of 16.5 months (95% CI 12.4-20.6). **Conclusions:** Our findings suggest that the frequency of EGFR mutations in Latin America lies between that of Asian and Caucasian populations and therefore support the genetic heterogeneity of NSCLC around the world. Copyright © 2011 by the International Association for the Study of Lung Cancer.

SciVal Topic Prominence

Topic: [Carcinoma, Non-Small-Cell Lung | Receptor, Epidermal Growth Factor | lung cancer:](#)

Prominence percentile: 99.918

Reaxys Database Information

 [View Compounds](#)

Author keywords

EGFRKRASLatin AmericaMutationNon-small cell lung cancer

Indexed keywords

EMTREE drug terms:	epidermal growth factor receptor; K ras protein
EMTREE medical terms:	Adult; aged; article; cancer survival; DNA sequence; drug response; EGFR gene; exon; female; gene; genetic heterogeneity; genotype; human; human tissue; lung non small cell cancer; major clinical study; male; oncogene K ras; overall survival; priority journal; sequence analysis; South and Central America; survival rate; survival time

MeSH:	Adenocarcinoma; AsiaCarcinoma, Large Cell; Carcinoma, Non-Small-Cell Lung; Carcinoma, Squamous Cell; DNA, Neoplasm; European Continental Ancestry Group; Female; Genotype; Humans; Latin America; Lung Neoplasms; Male; Middle Aged; Mutation; Polymerase Chain Reaction; Prognosis; Proto-Oncogene Proteins; ras Proteins; Receptor, Epidermal Growth Factor
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Chemicals and CAS Registry Numbers:

epidermal growth factor receptor, 79079-06-4;

DNA, Neoplasm; EGFR protein, human, 2.7.10.1; KRAS protein, human; Proto-Oncogene Proteins;

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